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TOXIC GOITRE: A SURVEY OF 125 CASES TREATED SURGICALLY

BY

JAMES M. GRAHAM, CH.M., F.R.C.S.ED.
SURGEON, ROYAL INFIRMARY, EDINBURGH

AND

H. L. WALLACE, M.B., F.R.C.P.ED.
ASSISTANT PHYSICIAN, ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN, AND LEITH GENERAL HOSPITAL

(From the Statistical Research Department of the Royal Infirmary, Edinburgh)

This paper is based on an analysis of 125 consecutive and unselected cases of toxic goitre treated by operation. All the cases came under the charge of one surgeon during a period of sixteen years. A few of the cases were treated as far back as 1918, but the majority have been operated on during the last six years. It is not our intention to present in any detail the symptomatology of toxic goitre or the operative technique, but rather to record the results of operative treatment in a representative series of consecutive cases. We are fortunate in that the great majority of the patients have been able to report periodically at hospital, so that it has been possible to make regular observations of their progress. All but a few were treated in the wards of the Royal Infirmary; cases treated privately have also been included to enlarge the series.

To simplify description cases have been divided into two groups—primary and secondary toxic goitre. Primary toxic goitre signifies toxic symptoms occurring as a result of pathological changes in a previously normal thyroid, giving rise in the majority of cases to typical exophthalmic goitre. The group classed as secondary toxic goitre includes those cases in which some simple form of goitre preceded the development of toxic symptoms, and the cases in this group correspond closely to those formerly described by Plummer as toxic adenoma. This classification, though it may be open to objection, is simple and comprehensive.

In our series of 125 cases 105 were classified as primary toxic goitre and twenty as secondary toxic goitre. On account of the difficulty of allocating some cases, these figures should be regarded as being only approximately accurate.

Sex and Age Incidence

Of the 125 cases 109 were females and sixteen were males: a sex ratio of 6.8 to 1. The largest number of cases occurred at the age period 20 to 40, the average age for the whole series being 33 years. Seven patients were under 20 and sixteen were over 50 years of age.

Duration

The duration of symptoms prior to operation varied from a few months to eighteen years, with an average of thirty-two months. In our experience it is not infrequently difficult to estimate the exact duration of symptoms, since patients with toxic goitre are apt to be vague in their statements and tend to underestimate the duration of their illness.

Severity of Cases

Since the severity of toxic symptoms may have an important bearing on the results of treatment, we have graded our cases as severe, moderate, and mild. In the severe group are included patients who at the time of operation were extremely toxic, bed-ridden, and entirely incapable of even the lightest activity. The moderate group comprises patients who showed very definite toxic symptoms and were unfit for their employment, but who managed with difficulty to "remain on their feet" and perhaps carry out the easiest household duties. In the group classed as mild are patients who showed only comparatively slight toxic symptoms and who were able to perform their various duties, although with some considerable effort.

In the following table the number of cases allotted to each group is shown:

Severe	33, or 26.4 per cent.
Moderate	65, or 52.0 „ „
Mild	20, or 16.0 „ „
Not classified	7, or 5.6 „ „

Previous Medical Treatment

A considerable proportion of the cases in this series had undergone a systematic trial of medical treatment before they were finally submitted to operation. Out of the total of 125, eighty-two had received prolonged courses of treatment in the medical wards apart from the usual pre-operative preparation. Such treatment consisted in long periods of rest in bed with iodine medication, and in some cases irradiation with radium had been tried. In the remaining forty-three cases, although we have no record of any intensive medical treatment prior to operation, we have reason to believe that the majority were treated with iodine and rest in their own homes.

Operation

Pre-operative Treatment.—Apart from the earlier cases in this series iodine has been given pre-operatively in the form either of Lugol's solution in doses of from 5 to 15 minims daily or of potassium iodide, 2 to 4 grains daily, over a period of from ten days to three weeks. When the symptoms have been severe larger doses of iodine have been found necessary. This regime has been

employed in both primary and secondary cases. Operation was performed when the maximum benefit seemed to have occurred, usually within ten to twenty-one days. The striking benefit which usually follows the administration of iodine is not as a rule maintained ; it is therefore an advantage if the iodine is discontinued for some time before the patient is admitted for preparation for operation. The diet given in the average case has a caloric value of between 2,800 and 3,000. No effort is made to force diets of 5,000 calories as such forced feeding tends to disturb digestion. The patient is encouraged to take glucose drinks during the pre-operative period and, during the two days immediately preceding operation, receives 100 grams of glucose daily.

Anaesthesia.—In the earlier cases in this series either open or intratracheal ether anaesthesia was employed ; later, gas and oxygen were preferred when a general anaesthetic was indicated. Local anaesthesia has, however, been employed in the majority of cases, and during the last six years has been regarded as the method of choice. Anaesthesia is induced by local infiltration of the operation area with 1 per cent. novocain solution and by regional block of the branches of the cervical plexus at the posterior border of the sternomastoid muscles. Care is taken to introduce the solution around the upper poles and above the isthmus of the gland. Local anaesthesia alone has been used successfully in ninety-seven of the cases in this series, and in only nine of these was it necessary to supplement it with light general anaesthesia. General anaesthesia alone has been used in twenty-eight cases. It is an advantage of local anaesthesia that the operation must be done with gentleness, and with the minimum of trauma, and that the patient can phonate at any stage of the operation if the integrity of the recurrent nerves requires to be decided. After operation under local anaesthesia the patient can take fluids at once, and there is a lessened tendency to respiratory complications. In order to perform the operation satisfactorily a pre-operative sedative is advisable. On the night before operation the patient receives 6 grains of veronal and 5 grains of aspirin. One and a half hours before operation one-third of a grain of omnopon is given, and one hour later, depending on the patient's reaction to the first dose, a second injection of omnopon is given if necessary. With omnopon as a pre-operative sedative the patient remains conscious and lies quietly during the operation. We have not observed any diminution of the respiratory rate in any of the cases in which omnopon has been used such as occurs with morphine and heroin. The use of omnopon has helped to strengthen our faith in the advantages of local anaesthesia in all types of toxic goitre, including those cases which at best can only be regarded as bad subjects for operation. Earlier experience with morphine and hyoscine was not uniformly satisfactory, as in some cases the hyoscine excited rather than quieted the patient. In a few cases avertin was used, but with it it was found impossible to perform the operation under local anaesthesia. The combination of avertin and light general anaesthesia, however, gave satisfactory results in the cases in which it was employed.

Operative Technique.—In the following tables are shown the types of operation performed in this series.

(A) *Primary Toxic Goitre*

		Cases
(1) Subtotal thyroidectomy		97
(*a*) One-stage operation	93	
(*b*) Preliminary ligation of superior thyroid arteries with subsequent subtotal thyroidectomy	2	
(*c*) Subtotal thyroidectomy in two stages	2	
(2) Resection of one lobe...		7
(3) Ligation of superior thyroid arteries		1
Total ...		105

(B) *Secondary Toxic Goitre*

	Cases
(1) Bilateral resection	10
(2) Enucleation of adenoma	7
(3) Resection of one lobe	3
Total ...	20

It will be noted from the above tables that one-stage bilateral subtotal thyroidectomy was performed in a very high proportion of the cases. The following is a brief outline of the technique employed in this operation:

After reflection of the skin and platysma, exposure is facilitated by wide separation of the skin flaps with a self-retaining retractor. The depressor muscles are freely separated in the mid-line. Transverse division of the muscles is seldom necessary. At the outset the upper pole of the right lobe is exposed and the superior thyroid vessels are ligated and divided. The lobe is drawn medially, and the middle thyroid vein and other accessory veins are secured at the lateral aspect of the lobe. The lower pole is finally drawn forwards, and after the thyroid sheath has been separated the inferior thyroid veins are ligated and divided, and the trachea is exposed. The left lobe is dealt with in a similar manner. After the whole gland has been freely exposed the isthmus is divided between clamps and each half is dissected laterally until the anterior part of the lateral surface of the trachea is exposed on either side. The greater part of each lobe is removed by sharp dissection with the knife from the medial to the lateral side, leaving a strip of the postero-medial part of each lobe with its capsule intact. The margins of the thyroid remnant are sutured together with catgut. In very toxic cases the amount of thyroid tissue left on each side is approximately equal in size to one-third of a normal lobe. When involution is well marked more tissue is conserved. In our experience there is a tendency to remove too little rather than too much gland tissue. A small glass drainage tube is inserted through a puncture in the pre-thyroid muscles on each side into the lowest part of the space around the trachea. The drains are brought out laterally between the lips of the wound, the edges of which, including the platysma, are approximated by fine catgut sutures and Michel clips.

Post-operative Treatment.—After operation the patient is encouraged to take fluids freely by the mouth. Six ounces of glucose-saline are given per rectum four-hourly during the first two days, a total of 50 to 100 grams of glucose being given during the first twenty-four hours. While the patient remains in the surgical ward the same dose of iodine is given as was taken before the operation, and thereafter the iodine is discontinued unless the pulse rate remains high. The drains are removed in twenty-four to forty-eight hours, and the clips on the third day, when the edges of the wound are painted with collodion to maintain apposition. After leaving the surgical ward the patient is usually transferred to a medical ward or convalescent home for a further period of rest. Patients who return direct to their homes are advised to continue to rest in bed for a few weeks, and to resume normal activities very gradually.

Post-operative Complications

Shock.—Although shock is exceptional, the blood pressure may be reduced as a result of the operation, particularly in chronic cases in which the gland has been unusually vascular and friable. In these circumstances we have given a transfusion of blood at the conclusion of the operation, which has had the immediate effect of restoring the patient to a safe condition.

Sepsis.—No serious infection occurred in the series. In six cases a mild infection developed ; these were all cases in which there was a collection of serum which necessitated the reinsertion of a drain. In none of the cases was complete healing delayed for more than a few days. In these cases with mild infection the average

number of days in the ward was 19, as compared with twelve days for the whole series.

Conjunctivitis.—This complication is liable to occur in cases with severe exophthalmos in which the eyelids fail to close during sleep or when the patient is under the influence of a sedative. Slight conjunctivitis occurred in a few of the early cases of this series. Subsequent experience has shown that it can readily be prevented by using some suitable eyewash and by protecting the eyes at night with a vaseline dressing kept in position by means of a bandage.

Dyspnoea from Pressure of Blood Clot.—In two cases the patient, who was perfectly comfortable and in good condition after returning to bed, developed after a few hours rapidly increasing dyspnoea with stridor. The rapidity with which the dyspnoea developed was such that both patients were soon in a critical condition. The stridor, which could be heard outside the ward, suggested bilateral abductor paralysis of the vocal cords. Within a few minutes of the onset of the dyspnoea in both cases the wound was opened up, and some clots under tension were evacuated from the retrosternal space. No bleeding points were seen, and there was no evidence of compression or collapse of the trachea. Within a few minutes the breathing became quieter, and within an hour it was normal. On examination of the larynx on the following day the vocal cords in both cases were found to move perfectly. Both patients made a satisfactory recovery. Somewhat similar symptoms, which, however, did not cause anxiety, developed in a third case, in which laryngoscopic examination proved that the vocal cords moved equally and well, and that the stridor was due to oedema of the hypopharynx and the upper part of the glottis. In this case the front of the neck seemed swollen as a result of accumulation of blood clot. On opening up the wound completely a large amount of clotted blood was found under tension, and a minute persistent oozing vessel on the front of the trachea was secured. The moderate degree of dyspnoea present was relieved by removal of the clot, and the patient's breathing was perfectly normal within a few hours. The details of these cases have been related in order to draw attention to a complication which may be encountered occasionally in any long series of thyroidectomy cases, and to emphasize the necessity for prompt recognition and immediate treatment.

Recurrent Nerve Paralysis.—No instance of either temporary or permanent paralysis of a vocal cord occurred in any of the cases in this series. In three cases limitation of one cord was noted on laryngoscopic examination before operation. In two of these recovery of movement of the cord was noted at a subsequent date.

Mental Symptoms.—Mental depression occurred in one case. The patient, who had suffered from primary toxic goitre for several years, was perfectly normal mentally until the tenth day after operation, when she became acutely melancholic and suffered from delusions. She was transferred to a mental home, from which she was discharged after a period of six weeks, having completely recovered her mental stability.

Tetany.—There were two cases of post-operative tetany. In the first case the symptoms were transient, and were confined to slight stiffness of the fingers, observed only on the first and fourth days after operation. Parathyroid extract and calcium were given for a period of two weeks. Thereafter no further signs of tetany were observed, and the patient has remained in excellent health. The second case was remarkable in that the symptoms of tetany did not appear until four months after operation, and no trace of parathyroid tissue could be detected in the resected lobes. Large doses of calcium were needed to control the symptoms, and although it is now three years since her operation, the patient still requires to take calcium regularly. The general health is excellent, and the patient is in regular employment.

Myxoedema.—Signs of myxoedema developed in one case. There was no indication of thyroid insufficiency until three and a half years after the operation, when the weight became excessive and mental apathy was noted. This patient is now in excellent health, and requires to take only 1½ grains of thyroid daily.

Results of Treatment

Since the main object of this paper is to present the results obtained by operative treatment in toxic goitre, we shall consider these in some detail. Out of a total of 125 cases 104 were examined personally by us when they presented themselves at hospital to report progress; a further ten patients were unable to report owing to distance or to family ties, and questionaries were sent to these regarding their present state of health. In nine cases the operation has been performed too recently to allow of their inclusion in this section dealing with after-results. Two cases are untraced. Thus if we omit the nine cases which have been operated on during the last few months, we are left with a total of 116 cases, and we have information regarding the present state of health in 114 of these. For the purpose of discussing the after-effects of treatment, therefore, 114 will be taken as the total.

When an attempt is made to assess the results of treatment in a condition such as toxic goitre it is important to have some standard by which each individual case may be judged; and while, no doubt, we can to some extent gauge the degree of improvement by the disappearance of certain symptoms and signs, we are strongly of the opinion that the most valuable criterion of success or failure is the patient's general health and well-being. In this section dealing with the results of operative treatment, then, we shall first of all assess the patients according to their general health and fitness for work at the present time, and then the effect of operation on various symptoms and signs of toxic goitre will be considered. For the purpose of a general assessment certain symbols have been employed as follows:

S++. The patients included in this group were completely symptom-free, and stated that they were able to carry out their usual employment without any effort.

S+. These patients stated that they were feeling very well and fit for their work, but still showed slight evidence of hyperthyroidism.

S. The patients thus classified showed definite improvement as a result of the operation but did not feel capable of a full day's work, there being definite persistence of toxic symptoms.

S−. This group comprises the failures, and includes patients who obtained little or no relief from their symptoms following operation or who showed definite signs of a recurrence of thyroid enlargement.

The above classification, founded as it is on personal impression, must necessarily be merely approximate. We would state, however, that great care was exercised both in the examination and in the questioning of each patient before the final assessment.

The following table shows the number of cases included under each heading and, in addition, the number of deaths is shown. These latter cases, in which the patient died as a result of the operation or on some subsequent occasion, are discussed further in another section.

S++	72 or 63.2	86.9 per cent.	
S+	27 or 23.7		
S	7 or 6.1	per cent.	
S−	1 or 0.9	,,	
Dead	7 or 6.1	,,	
	114		

This table reveals that 63.2 per cent. of those operated on are now completely restored to health and a further 23.7 per cent. are able to do a full day's work and remain practically symptom-free. Thus it may be said that highly satisfactory results have been obtained in 86.9 per cent. of cases.

Brief consideration of the patients in these groups may be of interest. Those classified S++ and S+ have been pronounced fit for their employment and, since the majority are women, the largest number are naturally engaged in housework. It is important to note that all the patients thus employed expressed themselves capable of the heaviest duties concerned with the management of their homes and not merely light household work. Regarding the time which elapsed following operation before the patients were able to resume their work our information is, unfortunately, incomplete. It is known, however, that 50 per cent. of the patients who are now fit for work were fully engaged in their various duties within one year of operation, and 30 per cent. were working within six months of operation. It is highly probable that these figures are considerably on the low side, and that resumption of work may usually be expected within six months of operation in successfully treated cases.

In the S group there are seven patients, and four of these are fit for light employment. The remaining three are able to go about, but any attempt at arduous work causes early fatigue. Study of these seven cases reveals that three have suffered from severe influenza or bronchitis since operation; two have had gynaecological operations, and two have had all their teeth extracted. The patients in this group have all gained weight since operation and show definite improvement in their general health, although persistence of a considerable degree of hyperthyroidism does not allow of their inclusion among the operation successes.

One patient has been classified S−, since, although there was some improvement following operation, there is now recurrence of thyroid enlargement and persistence of toxic symptoms.

Correlation of severity of symptoms with results of treatment may be conveniently shown thus:

	S++	S+	S	S−	Dead	Totals
Severe	15	9	2	0	5	31
Moderate	37	14	4	1	2	58
Mild	15	4	0	0	0	19
Unclassified ...	5	0	1	0	0	6
Totals	72	27	7	1	7	114

As would be expected, it is obvious from the above table that the best results are obtained in the moderate and mild cases.

Operation Mortality

In this series of 125 cases, four died as a result of the operation, representing a mortality rate of 3.2 per cent. In three of the cases death occurred on the day of operation, and the fourth died two days after operation. A brief description of these four cases may be of interest:

Case 1.—Mrs. C. W., aged 58 years. Duration, five years. Confined to bed for two years. Very feeble and exhausted, and weighed only 5 st. 3 lb. Operation: ligation of superior thyroid arteries under local anaesthesia. The decision to operate on this case was almost certainly an error of judgement.

Case 2.—Sarah D., aged 28 years. Duration, one year. B.M.R. + 90 per cent. Severe toxic symptoms. Operation: preliminary ligation of superior thyroid arteries followed by subtotal thyroidectomy with general anaesthesia. Post-mortem: fatty degeneration of liver with commencing necrosis of liver cells.

Case 3.—Andrew McI., aged 27 years. Duration, two years. B.M.R. + 59 per cent. Severe toxic symptoms. Operation: subtotal thyroidectomy with local and general anaesthesia. In this case death was possibly due to the pre-operative sedative, the patient appearing to have an idiosyncrasy to morphine and hyoscine.

Case 4.—Mrs. V., aged 50 years. Duration, two years, during which time she was confined to bed. Marked cardiac enlargement with auricular fibrillation. Operation: subtotal thyroidectomy under local anaesthesia. Died three hours after operation from sudden heart failure.

It will be noted that the operation fatalities occurred in the severest type of case. The four patients mentioned above had all received long courses of medical treatment without success before being referred to the surgical ward, and operation was only undertaken as a last resource.

In addition to the four patients who died as a direct result of the operation three have since died from other causes: two from diabetes mellitus, one and four years after operation respectively, and one from cardiac failure two years after operation. These three cases are not included under operation mortality, since, so far as can be determined, death was not in any way connected with the operation on the thyroid.

Effect of Operation on Certain Symptoms and Signs

When the patients reported at hospital following operation, notes were made regarding the presence or absence of certain of the commoner signs of toxic goitre. We would again emphasize, however, that we do not lay great stress on individual symptoms or signs, but rather on the patient's general well-being and fitness for work.

Exophthalmos.—In seventy-four cases where exophthalmos was present before operation we have information regarding the present state of affairs. This may be conveniently shown as follows:

Absent	Less	Unchanged	Total
25	41	8	74

It will be noted that exophthalmos was found to have disappeared in twenty-five out of seventy-four cases, or in 33.8 per cent., and in a further forty-one cases the degree of exophthalmos was considerably less than before operation.

Pulse Rate.—The pulse rate was recorded in each case before operation and on reporting at hospital after operation. The average rate for the total series before operation was 103 and after operation ninety-one—a difference of twelve per minute. It should be stated that these pulse rate figures are not strictly comparable, since the rate before operation represents the resting pulse rate after preparation for operation, whereas the post-operative rates were estimated when the patients reported at hospital, in some cases after a considerable journey. It was noted in a number of cases that tachycardia persisted for some months following operation, despite the fact that all other signs of hyperthyroidism had disappeared. A curious feature in connexion with the persistence of this symptom was that, in the great majority of cases, it did not appear to give rise to any discomfort and, in fact, the patients were usually quite unaware of its presence.

Auricular Fibrillation.—Auricular fibrillation was noted in ten cases at the time of operation, and we have information regarding all of these at the present time. In seven the pulse is now perfectly regular, and in one case the irregularity still persists eighteen months after operation, although the general health is excellent. The remaining two patients died, one on the day of operation and the other from cardiac failure two years after operation. Of the seven patients in whom the fibrillation ceased, five are now doing a full day's work without any discomfort and the remaining two are as yet only convalescing after their operation.

Weight.—A striking feature which was noted in almost every case was the gain in weight following operation. The average weight for the total cases before treatment was 120.5 lb., and the present average weight is 143.6 lb. Thus it will be seen that the average gain in weight amounted to nearly two stones. A point of interest in connexion with the weight is that many of the patients intimated that their weight rose rapidly during the first few months after operation and then tended to fall and become stabilized. The figures quoted here represent the stabilized weight and not the early rapid rise referred to.

Intercurrent Infections, etc.

When the patients reported they were questioned as to whether they had suffered from any illness since the operation on the thyroid. It transpired that thirty had suffered from some infection or prolonged worry subsequent to operation. Included in this number are two patients who have been confined and two who are at present in the late stages of pregnancy. A number of patients were found to have suffered from trivial ailments, but these have not been included, and it is only cases where confinement to bed for a considerable period was necessitated which are considered here. Out of the thirty patients mentioned above, twenty-three now enjoy excellent health and are fit for their employment despite intercurrent illness since operation. The remaining seven patients, to whom reference has previously been made, are all classified "S," and are not in a satisfactory state of health, although they assert that they feel better now than they did prior to operation. A point of interest arises in connexion with this question of intercurrent infection, since many of the patients remarked on their freedom from infections such as influenza and tonsillitis after the removal of the thyroid. Whereas previously they had been subject to frequent influenzal attacks, and the like, thyroidectomy appears to have increased their resistance to such infection.

Commentary

The treatment of toxic goitre is a subject which has given rise to much controversy in the past, and it is only in comparatively recent years, in this country at any rate, that surgery has been regarded with favour. Those who are averse to surgical intervention maintain that many cases may be cured by non-surgical measures, or that the operative risk is too great in proportion to the results obtained. There can be little doubt that many cases of toxic goitre may be greatly improved and even completely cured by medical treatment alone, but the admission of this fact should neither justify the adoption of medical treatment as a routine nor condemn operative treatment, since in most cases we are concerned not only with restoring the patient to health but with doing so as quickly as possible. Herein lies one of the great advantages of surgical treatment, since a high proportion of the patients thus treated are rapidly restored to good health and are enabled to return to their employment within a few months of operation. With non-surgical treatment, on the other hand, the patient may remain an invalid for many months, and at the end of this long period of inactivity there is no guarantee that she will be in a fit state to resume her normal activities. It is the uncertainty of medical treatment which is, in our opinion, its greatest disadvantage, since not only may there be little or no improvement as a result of such treatment, but there is a risk in some cases of actual deterioration in health with the lapse of time.

The question is frequently asked—What are the indications for operation in toxic goitre? It is now generally agreed that operation is indicated as a routine measure in all cases of secondary toxic goitre. It is in the primary case that opinion is so divergent regarding the advisability of operative intervention. The decision for or against operation in any particular case must be a matter largely of personal opinion. We believe that, in our present state of knowledge, toxic goitre must be regarded as essentially a surgical condition, and as such should be treated by operation with the minimum of delay. This view is no doubt open to criticism, but it is felt that many patients are lost as a result of prolonged attempts to save them from the ordeal of operation by continuing measures which too often are of little or no avail. It is surely preferable to advise a patient with toxic goitre to submit herself to the slight risk of operation when her general health is comparatively good, rather than to temporize until perhaps there is permanent cardiac damage, and resistance is at its lowest ebb, and then as a last resource be compelled to advise surgical intervention.

The problem of operative risk is one which must always be considered when advising treatment in toxic goitre. If surgery is to be successful, scrupulous attention must be devoted both to the operative technique and to the details of the pre-operative and post-operative periods. The operation mortality of 3.2 per cent. in this series cannot be regarded as a very serious risk, and yet it is probable that this figure would have been lower if the patients could have been treated at an earlier stage of their illness. A considerable number came to operation in a very poor state of health, in spite of careful and prolonged medical treatment, and all the fatalities occurred in this type of case.

We would suggest that if the best results are to be obtained in the treatment of toxic goitre to-day, operation should be recommended at an early stage in all cases. Timely resort to surgery would ensure the complete restoration of health in the vast majority, and the number of fatalities would be reduced to a minimum. Furthermore, permanent cardiac damage as a complication would, in these circumstances, be almost entirely eliminated.

Summary

The results of surgical treatment are presented in a series of 125 consecutive cases of toxic goitre. Approximately 90 per cent. of the patients operated on are now fit for regular employment.

The operation of choice was subtotal thyroidectomy, performed under local anaesthesia with omnopon as a pre-operative sedative.

The operation mortality rate was 3.2 per cent. All the fatalities occurred in severe, long-standing cases which had been resistant to medical treatment.

It is suggested that, in our present state of knowledge, toxic goitre should be regarded as essentially a surgical condition, and that if this were done the operation mortality would be reduced to an extremely low figure, and rapid and complete restoration of health would be achieved in the vast majority of cases.

Changes have been made in the method of subscription by non-members to the afternoon lectures at the Royal Institution, 21, Albemarle Street, W. In future single lecture tickets will be sold at a charge of 3s. each. The new arrangements apply to all the afternoon lectures, except the Christmas lectures. Subscribers to a course will receive a book containing the appropriate number of single lecture tickets, the rates being 7s. 6d. for a course of three lectures and 10s. for a course of four. The tickets will be transferable, and a single lecture ticket not used for the course for which it has been issued will admit to a lecture of any other course. Season tickets will also be obtainable. The privileges of members of the Institution are not affected by these changes. Members are admitted without ticket to the afternoon lectures, and they can purchase books of single lecture tickets, to admit their friends, at privileged rates.

AN ACCOUNT OF OBSTETRIC METHODS AT ST. MARY ABBOTS HOSPITAL, KENSINGTON

WITH A COMMENT ON MATERNAL MORTALITY

BY

G. W. THEOBALD, M.D., M.R.C.P., F.R.C.S.Ed. F.C.O.G.

CONSULTANT OBSTETRICIAN AND GYNAECOLOGIST TO ST. MARY ABBOTS HOSPITAL; LATE PROFESSOR OF OBSTETRICS AND GYNAECOLOGY, BANGKOK; FORMERLY ASSISTANT MASTER, ROTUNDA HOSPITAL, DUBLIN

Early in 1933 a number of wards, skilfully reconditioned and adapted, were opened in St. Mary Abbots Hospital for obstetric and gynaecological patients. This scheme was due to the zeal and imagination of the late medical superintendent of the hospital, Dr. Remington Hobbs, who unfortunately died without seeing the fruition of his plans. The fine gynaecological ward has been named after him, and his memory will be kept green.

The Arrangement of the Unit

As an experiment, and with the full concurrence of the medical superintendent, Mr. J. Carver, I was given entire professional control of the unit, and the purpose of this paper is to record the main results obtained in the maternity wards, and to draw certain conclusions from them. The delivery and lying-in wards for thirty-six patients are situated on the top floor. On the second floor there is an ante-natal ward containing fourteen beds. The gynaecological ward of twenty beds is on the ground floor, as is the "suspect" lying-in ward. All patients who have received ante-natal care, at whatever centre, are admitted straight to the top floor for confinement. All cases which have been tampered with outside, all B.B.A.'s, and all women with a heavy vaginal discharge, are confined to the ground floor and nursed in the "suspect" ward. Patients who have received no ante-natal care are admitted in the first instance to a side ward on the ground floor, and if found clean are transferred immediately to the top floor for confinement. Every patient admitted to the "suspect" ward is given an injection of 20 c.cm. of anti-streptococcal serum on the evening of delivery, and a further 20 c.cm. the next morning.

The rules and regulations governing the admission of patients and the minutiae of treatment to be carried out by the nursing staff are written in a ward book, and it is hoped that they will shortly be published. Reference will only be made here to those considered the more important. On admission, every patient commencing labour is given castor oil ʒij, which is followed by an enema some four hours later. A further enema is given towards the end of the second stage. Each patient is completely shaved, the razor being kept in pure lysol and an adequate supply of new blades assured. The breasts are thoroughly washed with soap and water, special attention being paid to the nipples, and then freely rinsed with a 1 in 1,000 solution of biniodide of mercury. After the breasts are dried the nipples are hardened with spirit. This treatment of the breasts is carried out as often as is convenient before delivery occurs.

The Ante-natal Ward

The ante-natal clinics are conducted by Miss P. N. Hooper, assisted by one or other of the resident medical officers. It has not been possible, mainly owing to expense, to put the patients on milk and cod-liver oil. All cases of contracted pelvis are brought up for a thorough examination in the hospital. All patients whose systolic blood pressure exceeds 140 mm. Hg, all cases of albuminuria, and all other "toxaemic" or ill patients, are admitted to the ante-natal ward.

Here I would stress the point that the best results from ante-natal care can only be obtained if an adequate number of ante-natal beds are available. In this respect the unit is most fortunate. During the year some eighty patients were admitted to this ward because of toxaemic symptoms, not only from the ante-natal clinic but also from outside sources. The most interesting feature of these cases was the large number of patients suffering from hyperpiesis (the diastolic pressure often exceeding 100 mm. Hg) who never developed albuminuria. They will be reported elsewhere. Here it suffices to say that all these patients were kept all the time on a full hospital diet, including eggs, bacon, and fish, but excluding meat. They were given in addition vitamins A, B, and D; iron; thyroid extract by mouth; and calcium gluconate by intramuscular injection. Induction of labour was never considered, and all the mothers save three went out with living infants.

One, a young primigravida, was a clear case of chronic nephritis, and her premature infant died during the first week of its life. One infant was lost because it presented as a breech and died during delivery, while the third was stillborn through torsion of the cord. In any case the mother of the last child had a normal blood pressure, and there was no albumin in her urine.

The Labour Ward

The nurses when conducting a confinement wear a mackintosh apron which is carbolized between each case. They do not wear masks or gowns. In my opinion the theoretical evidence in favour of droplet infection is unconvincing, and it is certain that the hospitals which have consistently produced the best results offer it no support. The vulva is a small area, and for practical purposes it may be assumed that the organisms responsible for puerperal infection gain access through this narrow portal. If the vulva is kept antiseptic during the second stage of labour and during delivery infection cannot and does not occur. Antisepsis, not asepsis, is the key to safe midwifery.

The antiseptic employed is a 1 in 1,000 aqueous solution of biniodide of mercury. A pair of tongue forceps is kept in a jar of lysol (the handles protruding) by the side of the patient. During the whole course of labour the nurse keeps the vulva not only clean, but antiseptic, by means of swabs taken out of the biniodide solution and held in forceps. My teacher, Dr. Gibbon FitzGibbon, has estimated that each delivery requires a gallon of biniodide solution. This figure is considerably exceeded in this unit.

Management of the Delivery

During delivery no sterile sheets, stockings, or towels are used. The vulva is cleaned with swabs out of biniodide solution from before backwards after every pain, the swabs being held in a pair of sterile forceps. In between the pains the midwife stands with both gloved hands immersed in biniodide solution. When the head is crowned, and not before, she places three fingers on the head to prevent it being born with a rush. At no time during the delivery should the fingers of the attendant touch the vulva or perineum of the patient. This method, which I have described[1] as the "modified Garden of Eden" method of delivery, is perfectly safe. The child's eyes are cleaned with swabs out of biniodide of mercury. The fundus of the uterus is not controlled during the third stage, for it can be seen. Leaving the fundus of the uterus severely alone does not lead to, but prevents, post-partum haemorrhage. Two drachms of the liquid extract of ergot are given as soon after the placenta is delivered as possible.

Sterilization of Gloves

Each pupil midwife has a pair of well-fitting rubber gloves, which she keeps in a tin labelled with her name. After washing her hands and rinsing them in biniodide solution she dries them on a clean towel. Before putting the gloves on she tests them to see that they are not punctured. After they are on she scrubs them under running water with soap, using a nail-brush. The gloved hands are soaked and rubbed together in the biniodide solution before a vaginal examination is made. After the vaginal examination the nurse washes the gloves and proceeds to make a rectal examination. She thus learns that she can find out almost as much by rectal as by vaginal examination.

There can be few who would contradict any of the three following assertions: (1) vaginal examinations are completely unnecessary during the course of a normal labour; (2) most surgeons are less willing to perform Caesarean section after one or more vaginal examinations have been made; (3) a vaginal examination made by the average midwife in private practice is a very different thing from a vaginal examination made under supervision in hospital. It is therefore astonishing that midwives are still not only allowed but compelled to make vaginal examinations during their training. Here is one source of mortality which could easily be eliminated.

The rectal examination made, the nurse holds the soiled finger under a stream of water until the gross soil is removed, and then proceeds to scrub her gloved hands in the manner described, soaks them in biniodide, powders them, and takes them off. The sterile outside of each glove becomes the inside on the next occasion they are used. After again testing them for punctures the gloves are replaced in the tin. The insistence on invariably using the nail-brush is because vernix caseosa and blood cannot be removed without its aid. Two gloves are always worn when making a rectal examination.

This method of sterilizing gloves, described by Theobald and Bigger,[2] has been successfully used in many institutions in different parts of the world. Apart from the value of the method in obstetric practice the saving on glove expenditure in a large hospital is very considerable. Colebrook[3] has confirmed our findings. The gloves can not only be made absolutely sterile, but definitely antiseptic. Oxley does not use rubber gloves, and I agree with him that they are not essential for normal midwifery, providing it can be guaranteed that all the patients are clean. Halsted introduced gloves for the protection of the sister who afterwards became his wife. I do not know whether many patients at the East End Maternity Hospital suffer from acute venereal disease or gross vaginal discharge, but I am convinced that gloves are essential, primarily to protect the midwife, and secondarily to protect subsequent patients.

The Conduct of a Difficult Case

The following two truths may be enunciated: (1) A low forceps rate is dependent more on the conduct of the first stage of labour than on anything which can be done during the second stage. (2) Other things being equal, the longer a woman remains in labour the greater her chance of becoming infected. In my opinion the secret of a normal issue in difficult cases is dependent on the judicious use of morphine, scopolamine, and quinine. Each patient starting labour at night is given an injection of morphine sulphate grain 1/4, and scopolamine hydrobromide grain 1/100. If when she wakens in the morning the pains are poor, quinine hydrochloride grains 10 is given by mouth. The quinine may be repeated if necessary in three hours. In some cases quinine hydrochloride grains 5 given three-hourly changes moderate into good "pains."

It is a common fallacy to regard the action of quinine as antagonistic to that of scopolamine. Slow dilatation of the cervix is due to inhibitory stimuli from the brain. These are cut off by the scopolamine, while the quinine augments the force of the uterine contractions. Quinine diminishes the anxiety associated with primary uterine inertia, but should not be given until the head is engaged unless the obstetrician is certain that it can pass through the pelvis. Quinine can and has caused rupture of the uterus. There can be little doubt that the value of this drug in toning up the uterus during the last few weeks of pregnancy and in increasing the force of the uterine contractions during labour is not fully realized in this country.

Conduct of the Puerperium

Each patient is given castor oil ʒij on the morning after delivery and a purgative on each subsequent night that she spends in hospital. She is encouraged to sit bolt upright in bed at frequent intervals, and is not hampered by any binder. The perineal toilet is made in the following manner.

The nurse wears gloves, but holds all the swabs she uses in a pair of tongue forceps. The patient is placed, suitably draped, on a douche pan. The soil is washed away with swabs out of weak lysol (half a drachm to the pint). A jug of biniodide solution is then poured over the vulva. The thighs and buttocks are dried, and the dry sterile pad is placed on the "wet" vulva. Particular attention is devoted to the bedpans. Each pan is flushed after use. The rim is then swabbed with pure lysol. The pan is subsequently immersed in a strong solution of lysol for at least ten minutes before it is again used. Silver catheters are employed exclusively, no rubber one being allowed in the wards.

Every patient is given potassium citrate until the urine becomes alkaline, and it is kept alkaline for some days. I have long been convinced that infection of the urinary tract usually precedes or is causally associated with puerperal infection. In any case the *Bacillus coli* can be cultured from the urines of from 10 to 20 per cent. of all puerperal patients. It is my belief that purgation and rendering the urine alkaline are two of the most important measures which can be adopted to prevent morbidity.

Attention has already been drawn to the treatment of the breasts on admission. Before and after each feed the nipples are washed with boric solution and subsequently with glycerin and borax. The swabs used for this purpose are held in a pair of sterile forceps. If the nipple is cracked it is treated at frequent intervals with spirit. Towels, somewhat similar to those used for circumcision, are daily provided for each patient. The nipple, after being cleaned, protrudes through the hole in the towel, and is thereby prevented from being contaminated by the blankets and nightdress. Further, great care is taken to see that the nails of the patients are kept short and clean. Each mother washes her hands and soaks them in biniodide before feeding her infant.

I maintain that a temperature of 98.4° F. during the puerperium is pathological, particularly if it occurs in the morning. More than 90 per cent. of the patients never recorded a temperature of 98.4° during their stay in hospital. Morbidity is the true index of the standard of work in a maternity hospital, and the attainment of a low morbidity rate demands the utmost vigilance, attention to detail, and something of the powers of a detective on the part of the obstetrician in charge.

Anti-streptococcal Serum*

It has already been stated that every patient delivered on the ground floor and nursed in the suspect ward was given an injection of 40 c.cm. of anti-streptococcal serum. In 1926 I reported that seventy-six consecutive cases admitted to the Leeds Maternity Hospital, after gross interference outside, were given this amount of serum, and of this number four patients died and fifty-seven had a normal puerperium. Since then I have regularly employed it in all contaminated cases. The extraordinarily low morbidity rate obtained in the suspect ward, which for many reasons was extremely difficult to run, confirms the view that the prophylactic use of anti-streptococcal serum is of immense value.

Abortion and Miscarriages

It is only because I believe that the late Dr. Remington Hobbs would wish truth to take precedence of sentiment that I venture to make the following remarks about the glycerin treatment. In his day this treatment was given to every woman after confinement, and I can only conclude that it in some measure contributed to the high morbidity rates he recorded. No maternity patient has been given glycerin during the last twelve months and only four simple intrauterine douches with weak lysol, followed by flavine 1 in 500, have been given.

I hesitated to stop this treatment for abortion and miscarriage, and was open to be convinced of its efficacy. A large number of patients are admitted to the gynaecological ward in whom abortion or miscarriage is inevitable. The vast majority of them are single women, and in nearly every case the abortion is due to criminal interference. Some women take drugs for which they pay an extortionate price. Others douche themselves with soap-water or lysol, and most succeed in introducing the nozzle into the cervical canal; while still others favour the use of sticks of slippery elm, which they introduce into the cervix. Still others pay large sums of money to doctors, midwives, and abortionmongers, and the latest method in vogue is to introduce a "lamp" into the vagina! Many of the patients were admitted with a high temperature. Now the glycerin treatment of such a patient is laborious, costly, and of long duration. The temperature often remains high for days, and even rises some days after the treatment is begun. Further, the placenta does not always come away. Glycerin is not irritant, neither is it definitely antiseptic, while its hygroscopic action is too weak to have any effect on the tissues. We have therefore gone back to the old-fashioned treatment. Every patient admitted with bleeding is examined per vaginam. If abortion is inevitable the uterus is emptied with the gloved finger with or without an anaesthetic. The uterus is not douched for fear of carrying the infection into the Fallopian tubes. Each patient is given 40 c.cm. of anti-streptococcal serum. The results obtained by this treatment are summarized as follows. Of 113 patients admitted between January and September of this year only one died. She was admitted moribund and in extreme pain, and died a few hours later. In the majority of cases the temperature fell as soon as the uterus was emptied, and the average stay in hospital was short.

Only one patient was drained. Two or three hours after the placenta had been removed from the cervical canal, without an anaesthetic, Dr. Craig decided that she had pus in the abdominal cavity. A small incision was made in the abdomen, through which a drainage tube was inserted. It is of interest to note that this was one of the few patients who had not attempted to terminate the pregnancy whether *per alia* or *per se*.

* Streptococcus antitoxin (concentrated), Scarlatina. L.C.C. Belmont Laboratories.

There can therefore be no doubt that the best method of treating cases of inevitable abortion which do not terminate spontaneously is to empty the uterus, using the finger and eschewing the curette and the douche. There can also be little doubt that the prophylactic use of anti-streptococcal serum is of great value, for convalescence was not as a rule complicated by pyrexia.

Maternal Mortality

During the first twelve months of this arrangement 846 patients were delivered of 856 babies, 393 of the women being primigravidae and 453 multigravidae. Of this number 746 were delivered on the top floor and 100 in the suspect ward. Of the patients delivered in the hospital four died.

Case Records

The first patient, a 2-gravida, was a case of "failed forceps," admitted from outside and with a badly ruptured uterus. She survived hysterectomy, performed the same day (but after the onset of peritonitis), six weeks, and then died from toxic absorption.

The second case was that of an ante-natal patient who died from eclampsia. She only paid three visits to the ante-natal clinic, the last being fourteen days before her death. At that visit nothing abnormal was discovered. Three days later she apparently fell ill, complained of headache and severe abdominal pain, and sent for her doctor. She did not come to the hospital until ten days later, during the whole of which time she had been ill. Shortly after admission she had a fit, and within two hours of this convulsion died, undelivered. The liver showed the classical lesions, and the right ventricle of the brain was occupied by a large haemorrhage.

The third patient died of circulatory failure. She was a 3-gravida, 32 years of age. Early in pregnancy she had a severe attack of pleurisy. She was repeatedly urged to come into the ante-natal ward, but refused, and insisted on remaining under the care of her own doctor. On admission oedema extended from the feet to the umbilicus. She was cyanosed and dyspnoeic. Labour was very short and easy, and her condition appeared to improve during the subsequent three days. Marked oedema of the right leg then developed; the urine contained albumin 0.9 per cent.; mental symptoms supervened; and she died on the twelfth day after delivery, her temperature having remained normal. This patient ought to have been sterilized after her last confinement, but there can be little doubt that pregnancy merely hastened the inevitable by a few months at the most.

The fourth patient was a primigravida 28 years of age. The pelvis was large; nevertheless the foetus died *in utero* a few hours after the rupture of the membranes. Later a well-marked contraction ring could be seen through the abdominal wall, just below the umbilicus. Under an anaesthetic the cervix was found to be fully dilatable, but the hand could not be passed above the contraction ring. Both arms were extended, and the cord was twisted twice round the neck. Two ampoules of amyl nitrite were broken under a mask and delivery effected, much difficulty being experienced with the shoulders. The blood pressure fell incontinently after the amyl nitrite had been given, and remained at an extremely low level, in spite of all treatment, until death occurred within two hours after delivery.

Maternal Morbidity

Of the 846 patients only fifteen were morbid as judged by the B.M.A. standard.[4] Seeing that this standard is no less abused than used its definition will be given:

"The table of puerperal morbidity should include all fatal cases and also all cases in which the temperature reaches 100° F. on any two of the bi-daily readings from the end of the first to the end of the eighth day after delivery."

It is, moreover, demanded that the temperature be taken in the mouth, and that the thermometer be left in the mouth for four minutes. In this unit half-minute thermometers were employed and kept in the mouth for three minutes. Further, four-hourly temperature charts were kept for each patient, so that no morbidity escaped unnoticed.

Of these fourteen patients no fewer than seven were admitted with pyrexia. The case of ruptured uterus has been mentioned: the six others had booked for the maternity wards of other hospitals. Two patients were admitted with lobar pneumonia, in one case complicated by otitis media; one had acute pulmonary tuberculosis; one was a case of influenza and bacilluria; one had acute venereal infection of the vulva; and the sixth had severe haematuria, albuminuria, and pyuria, possibly due to drugs taken with a view to terminating the pregnancy. If these seven cases and the other three deaths be excluded it will be seen that of 836 cases only five were morbid. In one case the temperature was definitely due to an influenzal cold, and in another to a right pleural effusion, which occurred on the seventh day of the puerperium, and was almost certainly tuberculous.

Operative Intervention

Induction of Labour.—The uterus was emptied early in pregnancy on two occasions, once for old-standing and severe chorea, and once for active tuberculosis with rapidly extending lupus. The membranes were ruptured at term on three occasions, twice because of changing presentation associated with pendulous belly and a slight excess of liquor amnii, and once in a multigravida whose first baby was born dead, as the simplest means of avoiding post-maturity. Quinine was given on many occasions to induce labour at term to prevent post-maturity and bed wastage. On no occasion was induction of labour carried out as a therapeutic measure because of either contracted pelvis or toxaemic symptoms.

Caesarean Section.—Caesarean section was performed once for central placenta praevia in a primigravida, aged 34, whose baby weighed over 8 lb.

The Forceps.—The forceps were applied on twenty-nine occasions, twenty-two of the patients being primigravidae and seven multigravidae. In nearly every case the head was at the outlet before the forceps were applied. Two infants were born dead, and two died on the fourth day from intracranial haemorrhage. The forceps rate was therefore under 3.5 per cent., but nevertheless, in my opinion, too high.

Infant Mortality

The fact that over 800 confinements were conducted without recourse either to Caesarean section or to the induction of premature labour for contracted pelvis makes it necessary to prove that the conservative treatment was not associated with a high foetal mortality.

Details of Cases

Sixty-one babies were either born dead or died in the hospital. Of this number, twenty-six were of thirty weeks' gestation or under (no fewer than twenty-four being admitted as emergencies); fourteen were dead on admission, eight being macerated; one premature infant was stillborn, and five others died in hospital; one hydrocephalic skull was perforated; and one microcephalic infant died from atelectasis. This leaves thirteen cases to be accounted for. One was a breech; two babies were lost through torsion of the cord. Three infants with normal vertex presentations were born dead after easy labours, and post-mortem examinations did not reveal the causes of death: one infant weighed 13½ lb.; the head was born normally, but delay occurred with the shoulders. An infant with a face presentation was lost because one arm was in the posterior nuchal position, and the cord was not only round the neck, but also round the trunk, where it was tightly clutched in the infant's hand. One primigravida had an extremely pendulous abdomen, and was mentally deficient. She refused to wear a binder or do as she was told. Somewhat late in labour I decided to perform internal version, but difficulty with the anaesthetic at a crucial point in the operation resulted in death of the infant before the version was completed. Subsequent delivery of the breech was not difficult. Two infants died from cerebral haemorrhage four days after delivery with the forceps. Two infants delivered with the forceps were stillborn; in one case the woman had already had two living babies, and the difficulty was probably to do with the shoulders; the other was a case of primary uterine inertia. The forceps were applied many hours too late. The head was well down in the pelvis from the commencement of labour. The foetus of the patient who had a contraction ring died *in utero*.

Thus, of sixty-eight stillbirths and neo-natal deaths, twenty-six occurred in pregnancies of thirty weeks or under (most foetuses weighing about a pound); fourteen were dead on admission; one was hydrocephalic and another microcephalic; and six were markedly premature (three being twins). A careful review of the remaining thirteen cases does not reveal any case where the death of the foetus was due to lack of operative intervention.

A considerable number of cases of contracted pelvis were, however, delivered normally. One patient—whose external measurements were interspinous 9½ in., intercristal 10½ in., and external conjugate 6 in.—delivered herself normally of a female child weighing 6 lb.; while two patients who had previously been subjected to Caesarean section because of contracted pelvis were allowed to go to term. The one delivered herself spontaneously, and the other was delivered with the forceps.

During the year thirteen infants were delivered in the occipito-posterior position, three of the mothers being primigravidae and ten multigravidae. In only one case—that of a primigravida, was the application of the forceps necessary. The largest baby to be born spontaneously in this position weighed 9 lb. 12 oz., and more than half the number weighed over 7 lb.

Manœuvre for Estimating Whether Head will Pass Through Pelvis

I do not believe in the trial of labour, because I am convinced that it is possible to decide at the thirty-sixth or the thirty-eighth week of pregnancy whether the head will be able to pass through the pelvis or not. It may be necessary to put the patient under an anaesthetic, but this was not found necessary in any of these cases. There would appear to be no doubt that the commonest source of error in making this estimation is to be attributed to the anteriorly projecting promontory of the sacrum.

The external measurements may be small. The head feels very large and hard, rides in front of the pubic bone, and cannot be pushed into the pelvic inlet. The patient is placed in the lithotomy position. Two or more fingers of the right hand are introduced into the vagina, while the left hand grasps the head by a reversed Pawlik's grip. The assistant sinks both hands behind the fundus of the uterus and lifts it forwards.

By this manœuvre, which I have not seen described elsewhere, the head can be pushed into the pelvic inlet. If the assistant merely pushes the fundus downwards the head overrides the pubic bone. It is for this reason that a binder during labour, advocated by some writers, is strongly contraindicated. Instead, the woman should sit up or adopt any convenient attitude which allows the fundus to fall forwards. In this type of case the head tends to remain well above the pelvic inlet until the cervix is at least half dilated, and until after the rupture of the membranes. It follows that in such a case a "trial of labour" is useless unless the attendant waits until an hour or two after the rupture of the membranes. I think, too, that the width of the pubic bone gives some help in estimating the difficulty of any given labour.

Comment and Discussion

I have reported what I believe to be the lowest morbidity rate that has been published by any maternity unit or hospital in the country, and have shown that

over 800 consecutive confinements could be conducted without resorting either to induction of labour or to Caesarean section in the treatment of contracted pelvis or of the toxaemias of pregnancy. The forceps rate, which I admit as being too high, was under 3.5 per cent. An analysis of the stillbirths and neo-natal deaths compares very favourably with those of other institutions whose reports I have studied. It can, moreover, be fairly claimed that the material was of more than average difficulty. A very high proportion of the patients were unmarried, and many of them tried to hide themselves during pregnancy and received no ante-natal care. Many were sent in as emergencies, and not a few who were booked for other institutions were sent to this hospital.

The peculiar problems associated with the management of an obstetric unit are not fully appreciated by practitioners of other branches of medicine. That obstetrics is a subject which deals entirely with emergencies is forgotten. The very fact that 90 per cent. of all cases can be dealt with by midwives merely makes the art of dealing with the abnormal cases more difficult to acquire, while the constant stream of normal cases is apt to put the obstetrician off his guard. Whitridge Williams laid it down that a man could not obtain an adequate training in obstetrics unless he resided for at least three years in a maternity hospital, where he assumed he would have the opportunity of expert guidance and instruction by day and by night. Jellett, in his book *Maternal Mortality*, stresses the same point.

There is another aspect of the question. Of recent years more than a thousand ante-natal clinics have been opened in England and Wales, and Browne[5] estimates that at least 80 per cent. of all pregnant women receive ante-natal care. More than 7,000 beds are devoted to maternity cases, many "consultants" and "specialists" have been appointed, and millions of pounds have been expended. Sensible changes in clothing, various Factory and Shop Closing Acts, and the increasing pursuit of open-air exercise have contributed to improve the physique and health, if not the stamina, of the women throughout the country. Thanks to the work of Mellanby, serious rickets is yearly becoming rarer, and is hardly encountered in the South of England. In spite of all these factors the maternal mortality rate for 1933 was the highest for many years. Even the mortality rate from the toxaemias of pregnancy shows no decline, while the ratio of stillbirths to live births is not decreasing. Browne (1934) has quoted figures which suggest that the mortality rate from eclampsia shows a slight improvement in the years 1931 and 1932. Reference to the *Manual of the International List of Causes of Death*, however, reveals that a transference of causes of death in the toxaemic group was made from one heading to another, and this change first appeared in the statistical reports in 1931. The heading "Puerperal albuminuria and convulsions" does not include the same certified causes of death as in previous years, and it is therefore necessary, in order to obtain comparable rates, to add the mortality rates from "Puerperal albuminuria and convulsions" to those for "Other toxaemias of pregnancy."* It will then be seen that the mortality rate from the toxaemias of pregnancy was higher in 1932 than in 1921.

Unless my view is correct,[6] that the toxaemias of pregnancy are deficiency diseases and may be prevented by seeing that each woman takes at least a pint of milk, a dessertspoonful of cod-liver oil, and vitamin B in some form or other throughout pregnancy, and is given an injection of calcium gluconate at the thirty-sixth and thirty-eighth weeks of pregnancy, then there is no evidence that the mortality rate from this cause can be affected by ante-natal care as at present organized. Nobody can deny that ante-natal care is in itself ideal and proper, particularly if it is supported by an adequate number of ante-natal beds. Neither can anybody deny that the results obtained by the Rotunda Hospital, the East End Maternity Hospital, the Queen's Jubilee Nurses, and other institutions, prove conclusively that no change in the habits and customs of the woman is responsible for the increased maternal mortality. The argument that the higher proportion of primigravidae confined is responsible for the worsening results is for the same and other reasons unconvincing. The logical conclusion of the whole matter is that the increased mortality is due to increased operative intervention.

I would submit that there are two fundamental questions which require answer from the obstetricians and medical statesmen: (1) Is it true that unnecessary operative intervention inevitably leads to increased morbidity and mortality? (2) Is it true that an individual cannot acquire a sound conservative knowledge of obstetrics unless he resides for at least three years in a large maternity hospital under expert guidance? If these two questions be answered in the affirmative then it follows that the more money spent, the more ante-natal clinics opened, the more maternity beds provided, the more "consultants" and "specialists" appointed, the more certainly will the mortality rate from childbirth exceed five per thousand in 1944.

* I am indebted to the Registrar-General of Births and Deaths for this information.

Summary

1. Over 800 patients were confined without resorting either to Caesarean section or to induction of labour in the treatment of contracted pelvis or of the toxaemias of pregnancy. Twelve out of thirteen infants were born spontaneously with the occiput in the posterior position. The forceps rate was under 3.5 per cent.

2. The morbidity rate was, it is believed, the lowest recorded by any hospital in this country.

3. The methods used in the labour ward can be carried out in any tenement dwelling in the country, no sterile gowns, towels, masks, or stockings being required.

4. A manœuvre for estimating whether a head can pass through the pelvis is described.

5. It is suggested that rendering the urine alkaline during the puerperium by administering potassium citrate is of importance in preventing morbidity.

6. A technique for preventing mastitis and breast abscess is given.

7. The value of the prophylactic use of anti-streptococcal serum is stressed.

8. It is suggested that the maternal mortality would be lessened if midwives were not allowed to make vaginal examinations.

9. It is further suggested that the increasing maternal mortality rate must be attributed to increased operative intervention. If the present policies are continued a still further increase may be anticipated during this decade.

In conclusion, I desire to record my appreciation of the cordial co-operation afforded by the medical superintendent, Mr. J. Carver, and I should like also to thank his deputy, Dr. N. S. Craig. I am indebted to Miss P. N. Hooper and Miss E. M. Carless, who have done most of the hard work. Last, but not least, my warmest thanks are due to the sisters and nursing staff, and, in particular, the senior sister, Miss G. Williams.

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DIPHTHERIA IMMUNIZATION IN A SCHOOL

BY

WILLIAM G. PATTERSON, M.D.Ed., M.R.C.P.Lond., D.P.H.

MEDICAL OFFICER OF HEALTH FOR WEYBRIDGE

Vaccination against small-pox has the supreme merit that in almost 100 per cent. of cases it develops complete protection against small-pox in a period shorter than the incubation period of the disease. Schick immunization, unfortunately, requires for its development a period greatly in excess of the incubation period of diphtheria. Hence Schick immunization is of itself an imperfect means of eliminating an outbreak of diphtheria without further mortality or morbidity. Greatest stress is therefore correctly laid on the importance of Schick immunization as a prophylactic procedure prior to the appearance of diphtheria in a community. But the value of Schick immunization as a factor in the rapid stamping out of an actual outbreak of diphtheria should not be overlooked.

This communication about an outbreak of diphtheria with which I became concerned in February, 1933, may serve to emphasize the advisability of applying the Schick procedures without delay, in conjunction with other appropriate measures as outlined below, whenever diphtheria appears in a community not previously Schick-immunized. Incidentally, it lays stress on the peculiar virtue of Schick-prophylactic T.A.F. as an efficient immunizing agent characterized by great freedom from undesirable general or local secondary reactions.

The Epidemic Described

The residential school in question had 310 boys, aged from 8 to 16 years. The physical condition of the boys was excellent, and they were extremely well cared for; but unusual facilities for droplet infection existed, owing to the close proximity of the beds in the very large dormitories; moreover, scarlet fever had been endemic in the school for some time. The stage was surely set for a considerable outbreak of diphtheria should the infection be introduced.

The first three cases of diphtheria were notified to me on the afternoon of February 5th, 1933, when N. M. and T. P. were admitted to Ottershaw Isolation Hospital under my care. The third patient, R. S., had died on February 3rd after a short illness; the diagnosis in his case was confirmed by a posthumous report concerning his throat swab, which had been taken just prior to his death. N. M. had a severe attack of faucial diphtheria, from which he made an uneventful recovery. T. P. had an extremely severe attack of diphtheria, from which he made an unexpected recovery.

A possible source of the infection was a fourth pupil, P. T., who, during the subsequent routine examinations, was discovered to have incipient paralysis of his soft palate; he subsequently developed complete paralysis of his soft palate and a severe degree of paresis of the legs; his paralytic complications kept him bed-ridden for several months. P. T., within a few days of his arrival home in London for the Christmas holidays, had developed a "sore throat." The only swab taken was negative for Klebs-Loeffler bacillus, and the diagnosis of diphtheria was not made. As this strong athletic boy was kept in bed at home for three weeks with a "sore throat" it is probable that his undoubted attack of diphtheria was severe from the onset.

Thus of the first four cases of diphtheria at this school one died, one almost died, one developed severe and long-lasting post-diphtheritic paralysis, and the fourth had quite a severe illness. It was obvious that the diphtheria which was presenting itself was of a virulent nature. Dr. Cooke, the school medical officer, who was more than fully occupied with an epidemic of influenza in his private practice, kindly gave me a free hand to make my own arrangements at the school.

I visited the school on February 6th, and by the next morning had the following measures under way: (*a*) Schick-testing and immunization, (*b*) detection and control of carriers, and (*c*) institution of daily routine examination of pupils to ensure early detection of any new cases of diphtheria.

Institution of Schick-testing

On February 7th and 8th I Schick-tested 310 pupils and twenty-seven members of the staff. Since I proposed to use T.A.F. as the immunizing agent, and had therefore no apprehensions about undesirable secondary reactions, I did not perform any control test with heated toxin, nor did I carry out the Moloney test. This was in accordance with my usual practice, and anyone who agrees that 337 intradermal injections in two consecutive afternoons is a monotonous business may consider the simplification of the test procedure permitted by the subsequent use of T.A.F. as an additional valuable feature of T.A.F. One week after the test injection ninety-seven pupils and fourteen members of the staff were found to be Schick-positive, and were given the first intramuscular injection of 1 c.cm. T.A.F. The second injection of 1 c.cm. T.A.F. was given after a further interval of four weeks. No Schick-negative boy subsequently developed diphtheria.

Owing to pressure of work I did not retest the Schick-positives until October 31st—that is, almost eight months after their second injection of T.A.F.—when eighty-five of the ninety-seven original Schick-positive pupils were retested and with one exception found negative; the one exception gave a faint positive reaction. These results were in harmony with the clinical findings, as none of the original Schick-positives developed diphtheria after they had received two injections of T.A.F.

Detection and Control of Carriers

Dr. Ferguson, county medical officer of health for Surrey, kindly placed at my disposal the services of Miss Draper, the assistant superintendent of health visitors. She examined the noses and throats of all pupils in the school daily for about a fortnight, referring all suspicious cases to me. We discovered sixteen nasal carriers with rhinorrhoea and positive nasal swabs. Virulence tests were not carried out because they would have cost 15s. each, and in the circumstances I would not have modified my treatment of any reputed avirulent carrier.

Swabs were taken only from pupils with suspicious clinical signs. Wholesale swabbing appeared out of the question, as at 3s. per swab a nose-and-throat swab per pupil would have cost over £90; by careful daily clinical examination for a fortnight, combined with judicious swabbing for confirmatory purposes, we at any rate succeeded in detecting the carriers most likely to be the source of massive infection. My own impression is that careful repeated clinical examination outrivals routine bacteriological examination as a method of detecting dangerous diptheria carriers in a community as much as careful clinical examination outrivals swab examination as a method of diagnosing the illness diphtheria. The sixteen nasal carriers, who were all Schick-negative, were segregated from the other pupils until the Schick-positives had received their course of immunizing injections. They were then released from isolation as soon as their rhinorrhoea had cleared up, no swabs being taken until then, and only one negative swab being required. The majority of the carriers were back at school within six weeks, though two were detained for three months.

The head master was informed that I did not guarantee, and indeed did not expect, that all of these sixteen boys had ceased to be carriers ; it was considered that the risk of massive infection from them had, at any rate, been eliminated, and, moreover, that after all the Schick-positives had received a course of immunizing injections it might be advantageous to turn some carriers loose among them to encourage the development of complete herd immunity, even at the expense of an isolated case or two of mild clinical diphtheria.

A Daily Routine Examination

With the object of ensuring early detection of any new case of diphtheria a daily routine examination of all pupils was for the first fortnight included in Miss Draper's search for carriers. Thereafter the daily examination was carried out by the school nursing staff, and was limited to the Schick-positives, who were examined daily for another three months. Dr. Cooke or I was informed immediately of any clinical condition suggestive of diphtheria. In this way there were discovered three cases of faucial diphtheria, H. S., E. S., and A. P., whose illnesses commenced respectively on February 22nd, March 2nd, and March 12th, 1933. All three were Schick-positives who had received the first injection of 1 c.cm. Schick-prophylactic T.A.F. All three had comparatively mild attacks of diphtheria, and made very rapid recoveries. This may be contrasted with the course of the illness of the first four patients, of whom one died, one almost died, one developed severe and long-lasting post-diphtheritic paralysis, and the fourth had quite a severe illness.

While the comparative mildness of the diphtheria exhibited by H. S., E. S., and A. P. was probably due in large part to the relatively early administration of the anti-diphtheritic serum, by clinical impression was that their diphtheria was of a mild nature from the onset. If this clinical impression is correct, possible alternative explanations are that, as a result of the first injection of T.A.F., they had developed either a considerable degree of immunity or facility to develop it rapidly when required, or that, owing to the removal of the frankly clinical diphtheria carriers from the school community, they had received relatively small doses of the diphtheria organisms from missed carriers.

Summary and Conclusions

In this residential school of 310 pupils, with exceptional opportunity for droplet infection in the somewhat crowded dormitories, and a synchronous prevalence of scarlet fever, a threatened epidemic of virulent diphtheria was stamped out within five weeks without further fatality and with very little further morbidity. Three agents were used to secure this result: (*a*) Schick-testing and immunization, (*b*) detection and temporary isolation of carriers, and (*c*) routine daily examination of pupils for new cases over a period of three and a half months.

All three agents played a vital and separate part in securing the good results obtained. The Schick-immunizing agent employed was T.A.F.—two 1 c.cm. injections being given at four weeks' interval. No general or local secondary reactions of any magnitude were observed. From the administrative point of view it should be emphasized that the great virtue of T.A.F. as an immunizing agent is that it seldom causes any undesirable secondary reaction. A diphtheria-immunizing agent capable of producing immunity with one injection and with greater rapidity than T.A.F. is greatly to be desired ; but unless such an agent compares favourably with T.A.F. in respect of secondary reactions it should not replace it for general use. We do want a diphtheria-immunizing agent comparable with small-pox vaccination for certainty and speed, but not at the expense of comparison with vaccination for severity of general and local reaction.

The experience outlined above suggests that Schick-testing and T.A.F. immunization, combined with detection and temporary isolation of carriers and adequate precautions to ensure early detection of new cases of diphtheria, will suffice to stamp out quickly a threatened epidemic of virulent diphtheria without further mortality, with little further diphtheria morbidity, and with no appreciable undesirable secondary reactions, in any community where the necessary administrative procedures can be carried out efficiently. If T.A.F. can do so much it should not be too readily discarded for " one-shot " diphtheria-immunizing agents until, as already stated, one is secured which compares favourably with T.A.F. in regard to absence of undesirable secondary reactions.

UNDULANT FEVER AND CONTAGIOUS ABORTION IN NORTHUMBERLAND

BY

A. I. MESSER, M.A., M.B., CH.B., D.P.H.

BACTERIOLOGIST, NORTHUMBERLAND COUNTY COUNCIL

The results of the examination of a first series of Widal sera for agglutinins to *Br. abortus* were recorded in a previous note (Messer, 1932). The investigation has been continued, and in the past three years sera from 425 patients have been examined. In sixteen (3.7 per cent.) of these a diagnosis of undulant fever was considered justified on serological and clinical grounds, the serum titres being as follows:

1 in 125	2 cases	1 in 1,500	5 cases
1 in 250	1 case	1 in 2,000	2 cases
1 in 1,000	2 cases	1 in 3,000	2 cases

In the remaining two cases complete agglutination occurred in a serum dilution of 1 in 250, but the end-titre was not ascertained ; fifty of the sera agglutinated *B. typhosus* and eighty-nine *B. paratyphosus* B in significant titres. The bacterial suspensions used were those supplied by the Oxford Standards Laboratory and the minimum " reduced titre " observed among the sixteen cases of *abortus* infection was 62.5.

Some discussion has centred round the significance of the agglutination reaction in the diagnosis of undulant fever. The consensus of opinion, however, with which the experience here recorded agrees, is that the test has much the same value and limitations as the Widal reaction in enteric infection. Both tests require to be interpreted in the light of what is known of the distribution of antibodies in the population at large, and having regard particularly to the occurrence of agglutinins resulting, in the case of enteric infection, from preventive inoculation, and, in the case of undulant fever, from the latent infections which are especially liable to occur in certain occupational groups. The difficulties thus arising are, however, simplified to some extent by the fact that a majority of active Brucella infections are accompanied by antibodies reacting in high dilution—1 in 1,000 or more—and such titres may usually be accepted as diagnostic. Equivocal results can frequently be elucidated by means of repetition of the test at intervals.

Clinical Features

Clinically, the cases that have been met with may be roughly divided into two groups. The first consists of six cases of a more or less mild—even ambulant—type in which the chief symptoms were headache, fatigue, loss of appetite, weakness, and sweating, especially at night.

Although mild, several of these cases ran a prolonged course. The remaining cases constitute a heterogeneous group in which the illness was of a more acute nature with a very varied symptomatology. Among the initial diagnoses tentatively advanced were enteric fever, tuberculosis, gall-stones, and arthritis. Brief notes of some of the more interesting of these are appended.

CASE I

Male, aged 74, clerk in drapery store. Illness began in August, 1931, with loss of appetite, asthenia, and persistent temperature. No other symptoms or physical signs. Temperature ran a curious course, consisting of sharp febrile bouts initiated by a rigor and lasting five or six days, alternating with varying periods of normal temperature, the illness being described as somewhat resembling malarial attacks. Patient became progressively weaker, and the illness terminated in January, 1932, with rigor, delirium, and death. Serum titre against *Br. abortus*, 1 in 3,000 on November 3rd, 1931.

CASE II

Male, aged 44, dairyman. In October, 1931, complained of pain in right hypochondrium and was sent to hospital with diagnosis of gall-stones. After being under observation for a few days was operated on, but nothing was found. Was transferred to a medical ward till temperature settled, but after return home had haemoptysis, and later numbness of left hand, especially middle, ring, and little fingers, with loss of power for gripping. These symptoms gradually disappeared and he was ultimately able to return to work, the total duration of his illness being about twelve months. Serum titre against *Br. abortus* on November 11th, 1931, 1 in 250. The dairy herd with which the patient worked consisted of tuberculin-tested cattle. Specimens of blood were obtained from all the animals in the herd—twenty-eight cows, one bull, and six calves. Of the twenty-eight cows the serum of two agglutinated *Br. abortus* at 1 in 2,500, ten at 1 in 1,000 (four had been vaccinated), two at 1 in 1,500, two at 1 in 250 (one had been vaccinated), three at 1 in 50, and one at 1 in 25; eight were negative. The serum of the bull was negative. Of the six calves the serum of one agglutinated at 1 in 25, one showed a trace only at 1 in 25, and the remaining four were negative.

CASE III

Female, aged 41, housekeeper on a smallholding. Duties included milking. On October 30th, 1932, suddenly seized with acute abdominal pain and sickness and very severe rigor. When seen was collapsed and shivering. Temperature 101° F., pulse rapid and poor. Complained of severe gastric pain. Next day very much better, and by November 4th insisted on commencing work. Seen again on November 17th. Was then looking very miserable and complained of always feeling cold and tired. Temperature 101.6°. Admitted to hospital for observation and nursing. After admission only symptoms were weakness and night sweats, temperature ranging from 97° to 98° in the morning to 102° to 103° at night. Serum titre against *Br. abortus*, 1 in 2,000 on November 23rd, 1932. Four of the six cows which this patient milked were subsequently found to give positive agglutination reactions.

Contamination of Milk Supply

Since attention was first directed to the occurrence of *Br. abortus* infections in this country a number of observers have reported on the extent to which the milk supply is contaminated with this organism. As regards ordinary market milk the percentage of positive samples varies in different circumstances from about 20 to 40, and recent work by Pullinger (1934) indicates that certified and Grade A (T.T.) milks are equally liable to be infected. During 1932–3 a series of milk samples sent to this laboratory for examination for *B. tuberculosis* was also examined for *Br. abortus*. The method adopted was the demonstration of agglutinins in the serum of guinea-pigs inoculated subcutaneously with the deposit obtained by centrifuging 50 c.cm. of the sample for thirty minutes at 3,000 revolutions per minute, the animals being killed after six weeks. Two animals were used for each test for *B. tuberculosis*, but only one of each pair was examined for *abortus* agglutinins. A serum titre of 1 in 20 or higher was accepted as evidence of infection. Of 720 samples so examined 145 (20.1 per cent.) were positive; thirty of the samples were of Grade A milk, six (20 per cent.) being positive, while the only sample of certified milk included in the series was also positive. In addition, eighteen (23.6 per cent.) of seventy-six samples from individual animals suspected by veterinary officers to be suffering from tuberculosis were found to contain *Br. abortus*.

Pullinger reports that of 105 samples of non-graded milk from herds in Cheshire thirty-nine (37 per cent.) contained *Br. abortus*, while of 104 similar samples from Somerset only twenty (19.2 per cent.) were positive. He suggests that this difference may be largely accounted for by variation in the size of the herds, though the possibility that the incidence of the disease is actually greater in the former county cannot be excluded. The present investigation affords some results bearing on this point which may be of interest. The majority of the samples were collected directly at farms in the county. In 401 instances the number of animals constituting the herd was stated, and the following table shows the proportion of positive samples according to the size of the herd. Smith (1932), who, however, used a more thorough technique and included cultural as well as agglutination tests, has published data on similar lines relative to Aberdeen, and although the size of the herd was stated in terms of the daily supply in gallons, Smith's figures may be modified for purposes of a rough comparison with the present results as shown in the table, if it be assumed that the average yield per cow is two to two and a half gallons per day.

Number of Cows in Herd	Aberdeen *			Northumberland		
	No. of Samples	No. +	% +	No. of Samples	No. +	% +
1– 9	98	24	24.4	205	21	10.2
10–19	102	26	25.5	122	24	19.6
20–29	51	19	37.2	49	18	36.7
30 +	28	10	35.7	25	10	40.0
Totals	279	79	28.3	401	73	18.1

* Modified from Smith.

Epidemiological Considerations

From the epidemiological standpoint no wholly satisfactory account of undulant fever appears to be possible as yet. Foreign opinion seems inclined to regard the disease as an occupational one, but the evidence collected by Champneys (1933) strongly suggests that in this country, while a small proportion of cases are due to direct contact with cattle, the majority result from the consumption of infected milk. Other possible sources of infection, such as contact with pigs, sheep, horses, dogs, or the consumption of milk products such as butter, cheese, ice-cream, are probably unimportant (Smith, 1934). There are certain difficulties in the way of accepting milk as the vehicle of infection, the chief being, first, that the number of (clinical) infections appears to be extremely small in proportion to the number of persons who may be presumed to be at risk, and secondly, that the incidence of the disease falls chiefly on adult males. By way of explanation of the paucity of cases it is suggested that a process of latent immunization takes place analogous to that known or conjectured to occur in other infections, and the age and sex incidence is accounted for

on the supposition that women and children are larger consumers of milk than men and consequently form a more highly immunized group in the community.

This hypothesis, however, itself creates a difficulty, since naturally acquired immunity postulates contact with the infecting agent, and clinical disease may be expected to occur most frequently among those undergoing the immunization process—that is, as regards undulant fever, those having close contact with cattle and those most accustomed to drink milk, presumably children. It has been demonstrated that latent *abortus* infections are much most frequent in the occupation group mentioned than in the population as a whole (Wilson, 1932), and there is some reason to suppose that clinical disease occurs among them more frequently than the recorded incidence would suggest. In this respect, therefore, the hypothesis outlined may not be greatly at variance with the facts. But among children both latent infection and clinical disease are apparently very uncommon, a remarkable circumstance having regard to the known incidence of *abortus* infection of milk. It is possible that the disease manifests itself in a somewhat different manner in children, and in them a mild febrile disturbance is perhaps more likely to escape adequate investigation, its real nature remaining undiscovered. On the other hand the validity of the assumption that children are in fact large consumers of milk may be worth reconsideration. Inquiries such as those of Savage (1926), Gellatly (1933), and Burns (1933) in Somerset, Cambridgeshire, and Durham respectively suggest that the use of milk as a beverage in this country is decidedly rare. One wonders, indeed, whether the drinking of milk, so far from being common among children, is not rather a habit acquired by adults, and one is led to speculate on the results which may follow the contemplated widespread distribution of raw milk in schools.

It has been suggested that the virulence of *Br. abortus* for man is being gradually increased by animal passage, and that ultimately case-to-case infection may follow and a fresh public health problem arise. Contagious abortion of cattle, however, appears to be a disease of some antiquity. Hull (1930) states that it was recorded by Moscall as long ago as 1567, and quotes from *The Complete Farmer* of 1807 instructions for dealing with infected animals. Any abrupt exaltation of virulence at this stage appears unlikely, but it does seem possible that the virulence of the Brucellae may be maintained through the exchange of strains between different animal species.

I desire to express my thanks to Drs. J. C. Yeoman, R. L. Dagger, and J. C. Mackay for permission to publish the clinical notes of their cases, and to Professor T. J. Mackie for advice and criticism in preparing this memorandum for publication.

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PROGNOSIS OF HAEMATEMESIS

A STATISTICAL REVIEW

BY

T. A. LLOYD DAVIES, M.D., M.R.C.P.LOND.
MEDICAL REGISTRAR, ST. THOMAS'S HOSPITAL

AND

R. W. NEVIN, M.B.CANTAB., F.R.C.S.ENG.
SURGICAL REGISTRAR, ST. THOMAS'S HOSPITAL

When considering the prognosis of any disease it is necessary to carry out a statistical investigation of a large number of cases of the condition. In the case of haematemesis this has been done frequently with conflicting results.

Hurst[6] (1928) gives a mortality of 2.5 per cent. among cases of haematemesis following peptic ulcers at Guy's Hospital, and suggests that the stomach should be washed out with ice-cold water. At the Bellevue Hospital, New York, Hinton[5] (1931) found a mortality of 20 per cent. among fifty-two cases of gross haemorrhage. Gordon-Taylor[3] (1934) states that at the Middlesex Hospital the total mortality of haematemesis following peptic ulcers treated medically was 24 per cent., and that the mortality in those cases in which a second large haemorrhage occurred was 78 per cent. Aitken[1] (1934) divided the cases of haematemesis at the London Hospital into two groups—moderate and severe. The total mortality of both groups was 11 per cent. Most of the moderate cases recovered, whereas twenty-seven out of sixty-three severe cases died (43 per cent.). Meulengracht[7] (1933) has recently treated 119 cases with a liberal diet immediately after the haematemesis: there were only two deaths in this series. This appears to be an entirely new method of treatment, the value of which it is difficult to assess. Chiesman[2] (1932), at St. Thomas's Hospital, reviewed 191 cases of haematemesis and gross melaena following peptic ulcers (occurring during the period 1925 to 1931 inclusive). The total mortality was 27 per cent., but in cases in which the haemorrhage was continued or repeated within twenty-four hours after commencement of treatment a mortality of 74 per cent. was shown. He did not distinguish between the severity of the different cases.

Cases Analysed

We have made a complete analysis of those cases which were admitted to St. Thomas's Hospital during the years 1924 to 1933 inclusive on account of, or with a history of, significant haematemesis or gross melaena occurring within fourteen days before admission, and also of those cases which developed significant haematemesis or gross melaena in hospital.

By significant haematemesis or gross melaena we mean that which is the obvious result of acute bleeding into the intestinal tract, thereby excluding a large number of cases which vomited small quantities of blood or had slight melaena. We have not divided the cases into aetiological groups, because of the difficulty of deciding the cause immediately following admission, and because even on discharge the cause is not proved in a number of cases. This difficulty is emphasized by Shaw[8] (1933), who referred to Gutman's[4] figures, in which in 21 per cent. of the cases no cause could be found.

We have divided the cases into two groups, according to their condition on admission to hospital, or (in the few cases which bled in hospital) immediately after the occurrence. Post-operative cases were excluded.

Group 1. Severe.—The cases whose clinical condition led one to suppose that the haemorrhage was severe, or those in which the examination of the blood showed the haemoglobin to be below 20 per cent.

Group 2. Moderate.—The cases whose clinical condition was not grave, or in which the haemoglobin was above 20 per cent.

By employing a strict definition and subdivision of haematemesis and melaena we have excluded a large number of cases which vomited up small quantities of blood or had slight melaena. Further, a number of cases have been placed in the moderate group which, with

Number and Type of Case	Total Mortality		Repeated Haematemesis			Treatment								
						Medical			Transfusion			Surgery		
	Number of Deaths	Per cent.	Number of Cases	Mortality		Number of Cases	Mortality		Number of Cases	Mortality		Number of Cases	Mortality	
				No.	Per cent.		No.	Per cent.		No.	Per cent.		No.	Per cent.
Severe ... 153	69	45.1	78	49	61.5	125	55	44.0	26	13	50.0	2	1	50.0
Moderate ... 238	15	6.3	28	7	25.0	223	10	4.9	11	1	9.1	4	4	100.0
Total ... 391	84	21.5	106	56	52.8	348	65	18.7	37	14	37.8	6	5	83.3

a less strict subdivision, might have been included with the severe cases. It is obvious, therefore, that the total mortality, as well as that of both groups, has been raised by this strict definition. Five cases were discarded owing to death from incidental disease, leaving 391 cases, of which 153 were severe and 238 were moderate. The total mortality was 21.5 per cent. (eighty-four cases), composed of severe cases, 45.1 per cent. (sixty-nine deaths), and moderate cases, 6.3 per cent. (fifteen deaths). In cases of repeated haematemesis—that is, cases which suffered more than one large haematemesis before or after commencement of treatment—the total mortality was 52.8 per cent. (fifty-six deaths among 106 cases), the severe cases showing a mortality of 61.5 per cent. and the moderate cases 25 per cent. The results are shown clearly in the accompanying table.

Result of Treatment

The effect of treatment is difficult to assess. All cases received medical treatment (rest in bed, morphine, rectal salines, and nothing by mouth): 348 cases received no additional treatment, and showed a total mortality of 18.7 per cent., severe cases (125) giving a 44 per cent. mortality and moderate ones (223) 4.9 per cent. Transfusion was performed in thirty-seven instances, with a total mortality of 37.8 per cent.; of these twenty-six were severe and showed a mortality of 50 per cent., and eleven were moderate and showed a mortality of 9.1 per cent.

Surgery was employed in an attempt to control the bleeding in only six cases, five of which died. In the successful case a posterior gastro-enterostomy was performed. There was marked pyloric obstruction in this case, in addition to haematemesis. Of the five fatal cases two were treated by transfusion and infolding of the ulcer; one by transfusion, infolding of the ulcer, and ligation of the coronary artery; one by transfusion and partial gastrectomy; and one by laparotomy and transfusion only—no ulcer was found.

The cases receiving surgical treatment are so few that useful deductions cannot be drawn.

Conclusion

1. In this large series of consecutive cases a strict definition of haematemesis and gross melaena is employed, and it appears that the total mortality from significant haematemesis and gross melaena is 21.5 per cent. This corresponds to Chiesman's and other recent figures, but differs from the earlier statistics.

2. The cases suffering from repeated haematemesis showed a mortality of 52.8 per cent., which is approximately the same as the severe cases.

3. The subdivision of cases into severe and moderate appears to be of value. In severe cases the mortality is approximately 50 per cent., whether treated medically with or without transfusion. In moderate cases treated medically the total mortality is 4.9 per cent. Most of the cases receiving transfusion had "repeated haematemesis," thus accounting for the increase in mortality (9.1 per cent.).

We are indebted to the staff of St. Thomas's Hospital for permission to examine the records of the cases admitted under their care, and particularly to Dr. H. L. Tidy for his interest and encouragement.

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Clinical Memoranda

TUBERCULOUS MENINGITIS WITH RECOVERY

I think the accompanying report of a case of tuberculous meningitis with recovery may be of interest.

On June 19th, 1930, I was called to see a girl of 14, a boarder in a public school. She complained of a sore throat; her temperature was 102.6° F., and her general condition was good. On account of the appearance of the throat I took swabs on two successive days, but they were negative for diphtheria. The throat quickly cleared up, and by the 24th the patient said she felt quite well. Her temperature remained about 99.4°. Examination failed to reveal any other septic focus or any tuberculous focus.

On the morning of the 25th, and after a peaceful night, the patient awakened about 4.30 with severe headache. I saw her at 10.30 a.m., when there was no improvement in the headache, and there was a marked ptosis, especially left, which increased during the day. The pupils were equal, reacting, and slightly dilated, and all reflexes were normal. By the evening the left knee-jerk was very sluggish, the plantar reflex was flexor, and Kernig's sign was negative; there was no head retraction, but there was pain at the back of the head and neck when bending the head forward. During the day she lay motionless, and only spoke when spoken to, or to ask for drinks. Her temperature rose to 102°, her pulse was good, and her respirations were quiet and normal.

By the evening of the following day the patient was semi-comatose. The knee-jerks had disappeared; the plantar reflexes were probably flexor, but doubtful; and Kernig's sign was positive both sides. There was stiffness and pain in the back of the neck, severe ptosis, and the headache was extreme; there was also some earache. In view of this last symptom, and especially as the condition followed immediately upon a septic throat, I called in a consultant ear and throat surgeon for an opinion as to whether the meningitis was aural in origin, but he reported that the ears were normal.

At 10 p.m. a lumbar puncture revealed cerebro-spinal fluid under great pressure and clear, and immediately after its withdrawal the patient became more comfortable and alert

and spoke intelligently. Thanks to the kindness of Dr. Parry Morgan, who examined the fluid at 11 p.m., it was found that the cell count was increased, that lymphocytes were in excess, and also that there was an excess of globulin. He expressed the opinion that it was almost certainly tuberculous, and this was confirmed the following morning by the finding of tubercle bacilli in the clot which formed. By this time the patient was definitely better, the temperature had dropped, the headache was less severe, and the ptosis not so marked; there was no change in the reflexes, and she was fairly alert.

From then on there was steady improvement, and a week later the knee-jerks were present both sides, Kernig's sign was lessening, there was no headache, no neck stiffness, and she felt well. The pulse rate, which had fallen to 40 per minute, was slowly and steadily rising. At the end of four weeks from the onset of meningitis she was taken home, and at that time her temperature and pulse were subnormal, her knee-jerks were sluggish, and Kernig's sign had not absolutely disappeared. She felt quite well, but easily became excited, and so was advised to remain quietly in bed for a few more weeks.

Repeated inquiries as to her health since then have always brought satisfactory answers, and recently I sent for her to satisfy myself that her recovery was really complete after an interval of four years. I found her more healthy-looking than before her illness, and quite normal in every way. She never suffered from headache, but had not returned to school after the twelve months' holiday I had prescribed.

Cardiff. CONSTANCE L. PARRY, M.B., CH.B.

RUPTURE OF THE SIGMOID FROM COMPRESSED AIR

This case is recorded to call attention to the great danger of careless or thoughtless handling of the compressed-air apparatus which is now being used in factories and workshops to an increasing extent for the purpose of cleaning by driving sawdust or dirt out of inaccessible corners. The air is driven through a pipe ending in a nozzle at a pressure of 100 lb. to the square inch, and if the nozzle is held within a few inches of the anus the sphincters are not sufficient to prevent the air from entering the rectum. The rectum itself, probably due to its fixation as well as to its thicker muscular wall, always, it would seem, escapes, but the sigmoid flexure is liable to rupture.

As a rule the accident happens as the result of practical joking. A few cases only have occurred in this country, but more have been reported from America, where Block and Weissman, in 1926, collected twenty-seven cases, of which no fewer than nineteen proved fatal. They consider that immediate operation, within two hours at the outside, gives the only possible chance.

The case now reported, that of a man aged 26, did not arise from practical joking, but from misapplied ingenuity in using the apparatus as a clothes brush. He stated that the nozzle just touched the buttocks, and he felt the air enter the bowels. Pain was immediate, and very severe, but he was able to get home with help, and was sent to the Southampton Hospital the next day. His general condition on arrival was quite good, but there was tenderness and slight rigidity in the left iliac fossa, where a thickened sigmoid was palpable. At the operation a quantity of blood-stained fluid was found in the pelvis, and the whole pelvic colon and mesocolon were thickened with oedema and effusion of blood. Fortunately there was no complete rupture, but in five or six places the outer coat of the bowel had given way, exposing the submucosa bulging through the rent. The largest area was about two inches in length, the others being one-half to one inch; the whole sigmoid loop was affected. No lesions were found in the rectum or descending colon. Recovery was rapid and uneventful.

H. J. NIGHTINGALE, M.S.Lond., F.R.C.S.Eng.,
Honorary Surgeon, Royal South Hants and Southampton Hospital.

Reviews

THE ARCHITECTURE OF PHYSIOLOGICAL FUNCTION

It used to be said of biology that it could hardly be regarded as a science until biological observations were expressed in precise numerical form. The accuracy and delicacy of measurements which abound in current physiological literature have rendered the contention at least obsolescent. The reluctance to admit physiology to the group of exact sciences is now based on different grounds, which may perhaps be indicated by the complaint that no generalizations of such wide application that they could fairly be called natural laws have yet emerged. There is, of course, no question that the wider generalizations of physiology cannot as yet profitably be formulated in mathematical terms; but Professor BARCROFT has shown in a new and important contribution to his subject[1] that such generalizations are gradually crystallizing, and that their range of application in different fields is much more extensive than even most physiologists would have supposed.

Progress in the detailed knowledge of physiological processes is bewilderingly rapid. A new physical or chemical technique and an appropriate animal preparation happen to appear together, first in the mind and then in the laboratory of a physiologist, and a new group of problems is launched. A small band of workers assails the problems, while the rest of the physiological world regards its work with admiration and sympathy but hardly with understanding. Specialization has developed to a point where, but for this book, one might have feared that no one man could appreciate the kernel of the problems fashionable in more than a few of the many branches of physiology.

Professor Barcroft shakes himself clear of the deluge of impersonal reports on what new methods can tell us about bits of animals, and wonders what are the things it would be really interesting to know about in connexion with how the body and its components work. The sort of thing that interests him is the astonishing constancy of certain fundamental properties of an organism, despite the spectacular changes continually proceeding, changes such as the intake of oxygen and food and the output of heat and work. He surveys the mechanisms which contribute to the maintenance of this physiological equilibrium, and finds that they fall into fairly definite classes. Starting, for example, with the processes in the blood, the kidney, and the respiratory apparatus, which ensure an almost unchanging hydrogen-ion concentration, the principles governing the mechanisms which ensure the steady state are formulated. They include adaptations of two kinds, evasion and correction, the principles of maximum activity, and of duplication of mechanism, and so on.

Overriding the significance of any particular class of adaptation, is the consideration that the reaction of an organism to a change almost invariably involves the interaction of a large number of mechanisms. The notion of a single cause, which was serviceable in the early history of the physical sciences, is peculiarly inappropriate in biology. One of the most-needed developments in the theory of physiology, a development which is hardly yet in sight, would be the discovery of the laws governing the integration of the elementary responses of the different mechanisms which co-operate in a single adaptation. Till such laws have been formulated in logical terms, the

[1] *Features in the Architecture of Physiological Function.* By Joseph Barcroft, C.B.E., M.A., F.R.S. London: Cambridge University Press. 1934. (Pp. 368; 106 figures. 20s. net.)

influence of the teleological argument will persist, owing to its indisputable success as a guide in research ; and physiology will remain a little more of an art and a little less of a science than is entirely comfortable for the intellectual integrity of those that pursue it.

But to describe the book as a philosophical treatise would be to convey quite a false impression. For into the somewhat slender analytical framework is built a critical review of the more significant of the current trends of physiological discoveries. The enunciation of principles leads immediately to a discussion of the interpretation of experiments ; the reader is put in possession of the leading facts, and feels he is invited to discuss with the author the merits of the case, much as if he were present in the laboratory. The mastery with which this extremely attractive technique of presentation is carried out is only possible because the author has had vivid personal experience in so surprisingly many fields, and has amplified it by a quite unusual insight into what his colleagues in his own and other laboratories are doing and thinking.

To the physiologist the book is a joy for its novel points of view, its innumerable happy ways of expressing them, and the vitality of constructive and critical thought ; for anyone who has forgotten nearly but not quite all his physiology there is no book which will so surely revive his interest in it, and bring up to date his information about most of those branches of the subject which, for the moment, seem to matter.

PHYSICAL DIAGNOSIS

Diagnosis and treatment are the two essential parts of the practice of medicine. The treatment to be adopted—that is, the *raison d'être* of medicine—depends on the diagnosis. Diagnosis, therefore, should inform us how to act ; it should search out the underlying causes of the disease and so give indications for sound therapy. A discussion of the methods to be used in diagnosis and the deductions to be drawn from the observations made is the subject of several good books, which, from the nature and bulk of the matter to be discussed, are necessarily large. Of this class perhaps the best known and most widely used in British schools of medicine is the book on diagnostic methods by Hutchison and Rainey, the popularity and value of which are attested by the demand for edition after edition. Books which deal mainly with the physical signs of disease that may be elicited by simple means, and which leave out discussion of elaborate instrumental (*x*-ray, etc.) or biochemical methods are, however, neither numerous nor popular. And this is understandable ; since the knowledge of physical signs, especially those elicited by means of the established methods of visual, tactile, or auditory investigation, is best gained in tutorial classes at the bedside. Nevertheless, the student is grateful to have a good summary of what he has learned which he may refer to and study at leisure, and this he will find in a well-written and handy book[2] by Professor Buck, who is an instructor in physical diagnosis at his own medical school in Boston. The subject-matter covers not only the ordinary ground of the physical signs of the chest, but also those in the head, neck, abdomen, and extremities.

After an introductory section on methods of examination and forms for case records, the author has a commendable chapter on the deductions to be drawn from observation of the patient as a whole. As he says, a good deal can be learned of the personality of the patient from his expression, manner of speech, dress, and actions. And these observations are not in any sense irrelevant. Not only are a third of the patients who consult the average physician sufferers from personality disorders, but even the symptoms of peptic ulcer and their treatment depend quite as much on the person who has them as upon "the mechanical and chemical physiopathology concerned." A sound description of the physical signs of disease and their interpretation follows. The book will be useful to students beginning their clinical studies, and to teachers of physical diagnostic methods.

[2] *The Essentials of Physical Diagnosis.* By Robert W. Buck, M.D. Philadelphia and London: W. B. Saunders Company. 1934. (Pp. 259 ; 21 figures. 12s. 6d. net.)

HUMAN WORM DISEASES

The earliest concrete theories of disease in man recognized that the worm parasites were among the chief causal agents, but the work of Pasteur and the development of bacteriology relegated the worm theory of disease to an insignificant position. Manson and his school, however, rediscovered the important part helminths play in tropical pathology, and the discoveries made in that field have again directed attention to parasites in temperate lands. Nowadays it is fully realized that, although the bacterial and virus diseases are of major importance in human medicine in Northern Europe, helminths play a distinct, although minor, part in medicine. These are more important on the Continent than in the British Isles, and it is therefore appropriate that the first textbook dealing with human worm diseases should be published in Germany.[3] This is essentially a textbook for the physician rather than for the specialist, and it covers all aspects of the subject. An introductory section deals with general principles of parasitic diseases, methods of diagnosis, and general therapy. The major part of the volume considers the individual parasites which are known to occur in man in north temperate lands. It begins with a systematic table of all the helminths recorded from all parts of the world—there are 124 of them—in which the twenty-four treated subsequently in the book are printed in heavier type. Of these, the great majority are parasites of lower animals which are only accidentally found in human beings ; many of these are absent from Great Britain and Ireland. In each case the authors discuss morphology, life-cycle, methods of infection and invasion, clinical symptoms and pathology, therapeutics and prophylaxis. Each section concludes with an adequate bibliography. The book is well illustrated with 156 half-tone photographs and drawings, and is printed on glazed paper. It is accurately written, and forms a most useful contribution to our medical libraries.

SURGICAL ANATOMY

The output of textbooks on surgical anatomy, as compared with those on pathology, is very limited, especially as regards works dealing with the subject with any considerable degree of completeness. Among the latter kind may be included the *Surgical Anatomy* of Professor C. Latimer Callander, which was published last year.[4] Although the author expressly states that the work is intended to be explanatory and utilitarian rather than encyclopaedic, it has taken ten years in the preparation, and its eleven hundred quarto pages contain a tolerably complete presentation of the subject. It aims at meeting the demands of the practitioner confronting everyday surgical problems. This requires a knowledge of the regional anatomy of the whole body. The primary

[3] *Leitfaden der einheimischen Wurmkrankheiten des Menschen.* Von L. Szidat und R. Wigand. Leipzig: G. Thieme. 1934. (Pp. 212 ; 156 figures. M. 15.50 ; geb., M. 17.50.)

[4] *Surgical Anatomy.* By C. Latimer Callander, A.B., M.D., F.A.C.S. With a foreword by Dean Lewis, M.D., Sc.D., LL.D., F.A.C.S. Philadelphia and London: W. B. Saunders Company. (Pp. 1,115 ; 1,280 figures. 63s. net.)

consideration is therefore a satisfactory classification of the entire body into suitable regions, first in relation to the surface and secondly in relation to the body cavities and their contents. The classification varies somewhat in different textbooks; that chosen by the author is thoroughly practical and well adapted for the topographical description of the anatomical surgical approaches, the paths of extension of pathological processes, and the steps of the commoner operations. In addition, special relationships are considered, such as that of the lymphatic channels in relation to their central connexions and to the lymph glands, the relations of muscles to bones explanatory of the displacement of fragments after fractures, and of ligaments to joints in relation to the reduction of dislocations. Further, embryology is to some extent called for in explanation of surgical malformations, and is of special importance as regards the gastro-intestinal tract and peritoneum, the development of which is described at great length and explained with the aid of numerous illustrations.

As to the general plan pursued by the author, the anatomy of the region or organ is first described, and then, under the separate heading of "surgical considerations," the surgical application is fully discussed and the commoner pathological processes liable to occur in the region described. The volume is illustrated by a large number of well-chosen figures, completely explanatory of the text, and there is no doubt the work will take its place as a standard on the subject. The opinion is expressed in the preface by Professor Dean Lewis that as anatomy has come to be regarded more and more as an abstract science its direct application to medicine and surgery has been neglected. In the medical schools the surgical department should therefore hold itself responsible for the proper approach to gross anatomy, and as early as the second year should attempt to develop an interest in anatomy which has a direct application in the clinic.

UNMASKING THE MYSTIC EAST

Lieut.-Colonel R. H. ELLIOT, diverging from his accustomed paths of ophthalmology, has published an interesting volume on *The Myth of the Mystic East*.[5] Some of the chapters have previously appeared, but others, on snakes and snake-bites, on witchcraft and the notorious Indian rope trick, afford entertaining reading. As the title of the book suggests, the author, by rigorous and rational investigation, is led to conclude that there is no such thing as "the mystery of the East," that fiction and fable have been built up on "the uncritical acceptance of popular superstitions." He thus dismisses "the rope trick," and with the knowledge of an expert conjuror and the eye of a detective he either explains on rational grounds or rejects as clever trickery sword-swallowing, well-jumping, fire-walking, and snake-charming. In many instances much suffering is no doubt endured or ignored by the devotees of some religious cult. Colonel Elliot is richly endowed with what Heine called "the instinct of distrust," and under his sceptical scrutiny witchcraft, occultism, and sorcery are exploded or reduced to rational explanation. The chapters on snakes are full of interest, and are based on years of experience, dating from the author's early co-operation with Professor Fraser of Edinburgh. He regards the dreaded cobra as a gentle reptile unless frightened or irritated; he considers permanganate of potash an unreliable antidote to venom, and looks to specific antivenenes as the most hopeful treatment against infection from snake-bites. In a chapter on the mongoose and the cobra, Colonel Elliot describes in a dramatic fashion the manner in which the former succeeds in attack on the hooded snake, and attributes the relative security of the mongoose against cobra venom to its skill, alike in onslaught and defence, rather than to any inherited or acquired immunity.

[5] *The Myth of the Mystic East*. By Lieut.-Colonel Robert Henry Elliot, M.D., Sc.D., F.R.C.S. Edinburgh and London: W. Blackwood and Sons, Ltd. 1934. (Pp. 301. 7s. 6d. net.)

Notes on Books

To the writing of diabetic manuals and primers there is no end, and two new editions have just appeared from two American clinics. From the Mayo Clinic Dr. R. M. WILDER has now reached a fifth edition of his *Primer for Diabetic Patients*.[6] It covers all the usual ground—diet, special recipes, insulin, urine tests, etc. With slight differences one might be reading Joslin's manual all over again. To refer the reader to Bulletin 28, United States Department of Agriculture (1898), is archaic. From the Cleveland Clinic Dr. HENRY JOHN has produced an extended and revised edition of his *Diabetic Manual*.[7] It is comprehensive and sound, and, as the author's personality stamps its mark on every page, interesting to the doctor as well as useful to the patient. Dr. John answers the question of "cures" with a straightforward negative, and gives his own views on the diabetic child and wife. We feel that mention should have been made of insulin 80 units per c.cm. (most useful to patients on large doses). And surely the diagram on page 93, which shows orange to contain more carbohydrate than potato, is inaccurate, and should be adjusted. But these are minor criticisms of an interesting and helpful book.

Principal Drugs and their Uses,[8] by A. L. MORTON, is a pocket dictionary of drugs written for the benefit of nurses, which gives notes on the nature and uses of all the important drugs. The object of the book is to provide elementary information regarding the medicaments in common use, and it seems very well designed for this purpose.

A little book on nursing, under the title "Elementary Précis of the Care of the Sick, Wounded, and of Infants,"[9] has been issued in France by the Red Cross Association. Dr. E. K. CONTET has done his work, in compiling this manual, extremely well, and maintains throughout a very practical outlook. The major difficulty of teaching practical work in a theoretical manner has been largely surmounted by a series of excellent line illustrations.

Newnes's *Chemistry in Commerce* is a work for students and practical chemists, to be completed in about thirty-two weekly parts at 1s. each, under the general editorship of Mr. Edward Molloy, with Mr. M. D. Curwen as advisory editor. The first part includes an article on the chemistry and pharmacy of vegetable drugs by Mr. Noel Allport, assistant analyst to British Drug Houses, Ltd., and a short account of first control tests on milk and milk products.

On September 10th, 1932, we printed a notice of Sir JOHN LYNN-THOMAS's pamphlet *Key of All Wales*, in which he set forth the grounds for his belief that Levantine tribes had once occupied the estuary of the River Teifi in Cardiganshire. He has now published a sequel, and copies of this second pamphlet may be obtained from the office of the *Western Mail and Echo* Cardiff (price 1s.). Sir John holds that the discoveries he has made around his home are of great archaeological importance; but he has so far failed to convince the "present holders of the three ring-fences surrounding our Ancient Monuments" that his graven stones, Irish elk bone, triple landing stage, etc., prove a Phoenician occupation of the area between 1500 and 1000 B.C.

[6] *A Primer for Diabetic Patients*. By Russell M. Wilder, M.D. Fifth edition, reset. Philadelphia and London: W. B. Saunders Company. 1934. (Pp. 173; illustrated. 7s. 6d. net.)

[7] *Diabetic Manual for Patients*. By Henry J. John, M.A., M.D., F.A.C.P. Second edition. London: H. Kimpton. 1934. (Pp. 232; 47 figures. 8s. 6d. net.)

[8] *Principal Drugs and their Uses*. By A. L. Morton. London: Faber and Faber Ltd. 1934. (Pp. 112. 2s. 6d. net.)

[9] Paris: Masson et Cie. 1934. (Pp. 176; 72 figures. 8 fr.)

British Medical Journal

SATURDAY, NOVEMBER 10th, 1934

POLIOMYELITIS

The recent epidemic of poliomyelitis in Denmark has again drawn attention to the measures available in the prevention and treatment of this disease. Prophylactic antiviral serum prepared from the horse has already been sent by the Lister Institute to Professor Madsen in Copenhagen, and it is hoped that some facts of statistical value may be obtained as a result. The subject of convalescent serum continues to be a thorny one, and doubts as to its efficacy in treatment seem, on the whole, to have increased with its continued use. These have been emphasized by the therapeutic experiences of Park,[1] the critical analysis of Walshe,[2] and the excellent statistical survey of Harmon.[3]

There now seems to be general agreement that the causal agent of poliomyelitis is a virus gaining access through the nasopharynx and undergoing an axonal transmission. Faber and Gebhardt[4] have, in fact, experimentally traced the course of the virus, after intranasal inoculation, from the olfactory bulb to the cells of the spinal cord, and the first-named author has shown that the symptomatology in man can be explained on the hypothesis of a primary nervous infection. Toomey,[5] contending that early intestinal and vesical disturbances are due to peripheral paralysis of bowel and bladder, has recently revived the conception of infection of the central nervous system from the gastro-intestinal tract along axons of the sympathetic system. Seeking to prove the contention experimentally, he states that injection of virus into a clamped segment of the bowel produces poliomyelitis in the monkey, and that the development of the disease produced by inoculation of virus is accelerated by the addition of faecal filtrates. Much further work will, however, be needed to assess the value of these observations. Virus has not been isolated from the blood stream in man, and only rarely, and after massive injections, in monkeys. According to this view the three classical stages—systemic infection, meningeal irritation, and paralysis—have no pathological basis, and the separation of abortive and non-paralysed cases is without justification. The possibility must, however, be admitted that the interpretation of the experimental disease in monkeys may not be allowable in judging the disease as it affects man. Martin[6] argues that a stage of general invasion running parallel to, but having varying time relations with, the nervous infection does exist in man, and by discarding cerebral and ataxic forms of the disease he simplifies its classical equation into spinal, brain-stem, and abortive types.

Since Levaditi and Landsteiner first showed that the serum of monkeys convalescent from the disease neutralized virus *in vitro* the history of the rationale and development of serum therapy has often been recapitulated in these columns. The only hope of treatment consists in bringing viricidal substances in sufficient concentration into contact with virus before cellular destruction occurs, but if virus is already within the neurones it would appear to be beyond the reach of immune substances. Harmon[7] concludes from his analysis of a large number of collected case records that treatment with serum has no influence upon the outcome in preparalytic cases. He demonstrates that there is little difference in the incidence of non-paralytic poliomyelitis in untreated and treated preparalytic cases (71.5 per cent. and 70.4 per cent. respectively, of 531 and 2,244 cases during the years 1916 to 1931). Tabulating the results of treatment of preparalytic and early paralytic cases with convalescent serum and Rosenow's antistreptococcal serum, he finds no essential difference either in the mortality rate or in the incidence of the same grades of paralysis. Obviously, intravenous administration is the only method which can bring serum into rapid contact with cells, yet Harmon shows by statistics that the issue is unaffected by the route of therapy. Because of the false perspective in which results were viewed, many treatments have been vaunted, but the uniformity of outcome shows the ineffectiveness of each, though marked general improvement and fall of temperature is observed following the administration of serum.

The conclusive therapeutic experiment has yet to be made, and in the light of present knowledge the most fervent humanitarian can scarcely object to the practice of withholding serum from properly chosen controls. It seems likely that more hope lies in the passive immunization of uninfected children ; and the reports of Davide[8] and Park,[9] who used convalescent serum, and of Brebner,[10] who injected parental whole blood, are very encouraging, though it is of interest to note here that in Philadelphia,[11] of 2,255 children treated during an epidemic with convalescent serum or whole blood, twelve developed the disease. Probably a number of these cases were infected before serum was administered. Finally comes the question of active immunization as a method of prophylaxis. Dr. Maurice Brodie[12] recently presented a preliminary report on his experiences with this method to the American Public Health Association. He pointed out that in 1918 Abrahamson and Gerber immunized monkeys by injec-

[1] Park, W. H.: *Journ. Amer. Med. Assoc.*, 1932, xcix, 1050.
[2] Walshe, F. M. R.: *British Medical Journal*, 1933, ii, 1197.
[3] Harmon, P. H.: *Amer. Journ. Dis. Child.*, 1934, xlvii, 1216.
[4] Faber, H. K., and Gebhardt, L. P.: *Journ. Exper. Med.*, 1933, lvii, 933.
[5] Toomey, J. A.: Quoted in leading article, *Journ. Amer. Med. Assoc.*, 1934, ciii, 840.
[6] Martin, J. P.: *British Medical Journal*, 1933, ii, 1200.
[7] Harmon, P. H.: Loc. cit.
[8] Davide, A.: *Bull. Off. Internat. d'Hyg. Publique*, 1928, xx, 74.
[9] Park, W. H.: Quoted by J. B. Neal in *Poliomyelitis*.
[10] Brebner, W. B.: Preliminary Report of the Results of Administration of Normal Adult Serum in the Prophylaxis of Poliomyelitis during the 1932 Epidemic, footnote 59, p. 529.
[11] Heney, J. N., and Johnson, G. E.: *Journ. Amer. Med. Assoc.*, 1934, ciii, 94.
[12] Brodie, M.: *Lancet*, 1934.

tion of formalized virus suspension. Having proved the absence of harmful reactions on himself and other volunteers, including Dr. Park, he administered this vaccine to twelve children. Preliminary tests have indicated the production of antibodies, though whether these will protect against natural infection cannot yet be determined.

THE CHANCES OF MORBID INHERITANCE

"Ought I to get married?" "If I get married ought I to have children?" "If I get married and have children what are the chances of their inheriting my disease or a disease which occurs in my family?" These are questions, says Dr. C. P. Blacker, general secretary of the Eugenics Society and editor of a symposium[1] recently issued, which are likely to be addressed to the physician more and more often in the future. It is to meet this need, by setting forth the principles which should govern a genetic prognosis in many different diseases or groups of diseases, that this valuable book has been written. It is composed of eighteen contributions, each by a specialist and acknowledged authority on the subject with which he deals.

In his brief introduction Sir Humphry Rolleston refers to the great fall in the birth rate during the last sixty years as being due to the progressive adoption of the practice of birth control, "chiefly by those qualified and likely to practise birth control, whereas the families in the other category"—that is, the feckless and improvident—"while as large as before, show a much higher survival rate than formerly as a result of the philanthropic care which has been lavished on them so widely. The aim of eugenics is to counteract this recent and racially harmful development of civilization." The aim of this book, however, greatly to its gain, is limited to practical issues and needs, and its arguments and conclusions are based, not on general assumptions of racial degeneration and a conjectured increase of mental and physical defect, but on observed and carefully assembled fact. Eugenic prognoses are especially likely to be sought by those concerned in such conditions as mental disorder and defect, epilepsy, cancer, and tuberculosis, etc., and therefore a greater amount of space is devoted to these subjects than to other and rarer conditions—for example, haemophilia, albinism, amaurotic family idiocy, etc.—in which the modes of hereditary transmission are well known and the results of mating accurately predictable. Professor Ruggles Gates, who has given the main ascertained facts with regard to the inheritance of normal and abnormal conditions in man in his book *Heredity in Man*, provides here in the opening chapter on "Genetic Principles" sufficient for the practical purposes of this work concerning Mendelian inheritance and the applications to man of the main genetic principles. These principles, he says, are highly elastic and apply with much greater force to some diseases than to others; also, knowledge is still imperfect in many diseases. Therefore advice given by the physician in some cases can only be of a general character. Again, in certain cases outstanding desirable qualities may so outweigh the presence of certain serious inherited defects that in the last resort "it comes to a judgement regarding probabilities and the weight to be attached to particular beneficial or defective qualities." Advice against procreation should be given, he says, only when the perpetuation of serious defects is involved—that is, when the victims would be handing on their burden to later generations.

Conformably with the principles laid down each author in this deeply informative and interesting series first states the problem and its particular difficulties in the morbid processes with which he deals; then discusses the respective roles in each type of disorder played by inheritance on the one hand and environment on the other; the mode of transmission, if known; and, lastly, the principles on which advice to the inquirer should be based. The work is of so wide a compass—embracing the inheritance of nervous and mental diseases and mental defect; inheritable diseases and abnormalities of the eye, ear, skin, kidneys, blood, and vessels; diabetes, tuberculosis, neoplasms, cretinism, etc., each contribution by a master of his subject—that adequate notice of the whole is impossible here. As, however, advice regarding the risks of transmitting mental disorder or mental defect to offspring is so frequently sought and as these are subjects so much to the fore to-day, the two papers by Dr. Aubrey Lewis and Dr. Henry Herd may be specially mentioned as examples both of the careful and unbiased treatment of rather controversial matters and of the reasoned practical advice which distinguishes the whole number of articles. The extreme difficulties in the way of genetic research into the mode of transmission of mental disorders are widely recognized, and in consequence, as the recent Departmental Committee on Sterilization found, there is nothing like certainty or unanimity of opinion in this matter. But, as Dr. Lewis says in his exposition of inheritance of mental disorders, the discovery of Mendelian relations does not matter so much to the physician who has to give a genetic prognosis. "For him empirical means of predicting the mental quality of offspring are more useful than disputable statements about recessive polymerism and the like. For the last few years investigations have been directed more to this practical end, comparable to the work of an insurance actuary; and arguments about the applicability of Mendelian rules are, for the moment, in the background."

This empirical assessment of probabilities, arrived at mainly by the results of mass investigations of non-related but similarly affected families, certainly throws into high relief the "familial" occurrence of certain mental disorders as compared with their occurrence in random samples of the general population. Thus, to take one example out of many, one investigation quoted

[1] *The Chances of Morbid Inheritance.* Edited by C. P. Blacker, M.D. London: H. K. Lewis and Co. Ltd. 1934. (15s.)

(Luxenburger, Schulz) made upon the siblings (brothers and sisters) of one hundred patients with dementia praecox, one hundred with manic-depressive psychosis, a like number with epilepsy, with general paralysis, etc., as against in each category the siblings of the same number of the general population taken at random, showed that the possibility of manic-depressive psychosis is twenty-five times as great as in the general population, of schizophrenia (including dementia praecox) six times as great, and of epilepsy nine times as great. The intensity of inheritance is thus strongest for manic-depressive psychosis, less for dementia praecox and epilepsy, while for general paralysis inheritance is negligible in comparison with environmental factors. In the concluding twelve pages of a notable contribution to the subject Dr. Lewis discusses the application to the individual of the probabilities of occurrence of various mental disorders among the children, siblings, grandchildren, nephews and nieces, and cousins of affected parents so far as these have been thrown up by investigation. His whole exposition is admirable in manner and treatment, and goes far to justify his remark that the last twenty-five years' painstaking work of a few men, foremost among whom is Rüdin, has wiped away the reproach that genetic psychiatry was bad psychiatry and bad genetics. It will be read widely and with much profit ; for even if, as Dr. Lewis says, "the physician's eugenic advice is perhaps oftener sought than followed, for loyalty, love, plighted obligation, wilful optimism that is blind, social or economic advantage may in their degree prevail against mere assurances of probability, and assurances of probability are all the physician can offer," it is also true "that it is not to be supposed that he acts only by deprecating: he can also reassure and encourage."

CONTROL OF SECRET REMEDIES

The English are a conservative people, with no love of logic. But though hard to move in matters of sentiment or opinion, and patient almost beyond belief, they have a way of accommodating themselves in double-quick time to a new order once it has been put into force. To illustrate this point we need only mention daylight saving, conscription and food control in wartime, women's suffrage, roundabout traffic, and now the prohibition of the use of motor horns at night in "built-up areas." All these things were said to be impracticable, or worse, and a hundred objections bobbed up beforehand. Yet each proved to be workable, and in the twinkling of an eye the people of this country got accustomed to it. In short, we are a law-abiding race so long as the law is believed to be made in the general interest and appears to touch all alike. The hard task is to get a good measure on to the Statute Book: there is little difficulty in enforcing it. The things that stand between Britain and many long-overdue reforms are the vested interest, the timid or time-serving politician, and the newspaper proprietor with one eye on what big advertisers will do and the other on what he pretends to imagine his readers will stand. If, for example, the patent medicine business were cleaned up to-morrow and all the worst offenders swept into bankruptcy, there would be no outcry from the poor and ignorant whom the nostrum-monger exploits, but there would be some further unemployment and much loss of advertising revenue. A great deal of dishonest nonsense is talked about "not legislating ahead of public opinion." If reform had always waited upon public opinion we should still be having public executions.

The case for the control of secret remedies is unanswerable. It was put plainly by the British Medical Association in its evidence before the Select Committee on Patent Medicines, and the Select Committee's report, issued as a Blue Book in 1914, was an uncompromising document—which the newspapers ignored. It is true that that report had the bad luck to appear on August 4th ; but if there had been no war we take leave to doubt whether the lay Press in general would have given it any publicity, notwithstanding its obvious "news value." One of the first things Dr. Addison did as Minister of Health was to father a Bill based on the Committee's proposals, and Lord Astor introduced it in the summer of 1920. It never reached the Commons. Eleven years later Mr. Somerville Hastings introduced a milder Bill with the support of the Labour Party's advisory committee on public health. This, too, was dropped. Now a still milder measure is under consideration by the Parliamentary Committee on Food and Health—and its mildness may be judged by the fact that the patent medicine trade has agreed to offer no opposition. The Council of the Royal College of Surgeons of England, whose statement on patent medicine legislation we reproduced last week at page 822, has informed the Committee on Scientific Research of the Economic Advisory Council, in answer to an inquiry, that in its opinion the problem can only be adequately dealt with on the lines laid down by the Select Committee of the House of Commons in 1914. This is also the view of the British Medical Association, and was declared to be so by the Annual Representative Meeting in 1915.

INTRINSIC NERVOUS MECHANISM OF THE HUMAN LUNG

Whilst the greater part of our knowledge of the mechanism of respiration has been obtained by physiological experiments, the contributions made by the anatomist and histologist have been the starting-point in many directions. The significance of many physiological experiments becomes either more apparent or more difficult to see according as the results can be correlated with anatomico-histological findings. Anatomical bases for well-known physiological phenomena are still lacking. It is therefore gratifying to see that certain workers are persevering with the finer definition of pulmonary innervation. Such work has recently been published by J. B. Gaylor.[1] The nerves of the lung, derived from the pulmonary plexuses, enter at the hilum and present two separate and distinct

[1] *Brain*, 1934, lvii, 143.

symptoms—the vagal and the sympathetic. Gaylor divides his observations into those on the bronchial plexus, the epithelial innervation, the nerve endings in the plain muscle of the bronchi and bronchioles, the innervation of the glands, and the pulmonary vessels. The large and middle-sized bronchi are very richly supplied with nerve fibres, and the plexus can be traced far down to the terminal bronchioles. The complexity of the bronchial network and the free intermingling of the fibres lead this author to consider it as one unit, and not as divisible into an intrachondrial and an extrachondrial. Along the course of this plexus are found nodes which may or may not contain ganglion cells, but ganglia may also exist on the course of the nerves at other places than these nodes. So complex is the arrangement of the fibres that it is impossible to trace an individual fibre for any considerable distance. A peculiar fact is that fibres may pass straight through a ganglion without loss of the medullated sheath, whereas others are related to the ganglion as pre- and post-ganglionic fibres. This plexus supplies the bronchial epithelium, the bronchial muscles, and the bronchial glands, and Gaylor considers that the non-medullated fibres have to do with the innervation of the vessels of the bronchial capillary bed. The nerves supplying the bronchial muscles are non-medullated, which appear to be motor in function, and medullated, which appear to be sensory. The latter are without doubt vagal in origin, and impulses derived from stimulation of the endings travel via the bronchial plexus into the main vagal trunk. The sensory endings associated with the plain muscle are found at the junction of the muscle bands. It must be recalled that the bronchial muscle is not a continuous sheet but a network of bands, some running transversely across the bronchus and some obliquely or even parallel to the long axis. This arrangement is such that during contraction of the muscle there will be, in addition to some constriction of the bronchial airway, a definite shortening of the bronchial tree. Now the position of the sensory endings is such that maximal stimulation of them will be produced when the bronchial muscles are stretched and the meshes of the muscular network widened—that is, during inspiration. In support of his contention Gaylor points out that the sensory endings here considered are morphologically of the type found in the carotid sinus, which are specially adapted to respond to stretch, and also that the position of these endings is at points of division of bronchi, where the greatest amount of movement occurs. It is reasonable to regard these sensory endings as sensitive to stretch of the muscles, and further that they are the receptors for the well-known Hering-Breuer reflex. This leads the author to a hypothesis of the mechanism of bronchial asthma. Whereas it is often considered that many of the symptoms of asthma result from stimulation of the endings in the bronchial musculature, Gaylor is disposed to believe that the contraction of these muscles prevents the normal stimuli of stretch to which the afferent endings are susceptible. He suggests that in addition to the mechanical difficulty of expiration in bronchial spasm there is a nervous upset. The relatively greater difficulty in expiration is partly explicable by the fact that the capacity of the chest works against the spasm in inspiration and with it in expiration. The greater inspiratory effort required to produce an adequate stimulation of the afferents may be such that expiration may become a voluntary act. The author makes certain interesting suggestions as to the significance of collaterals of the vagal afferents in the bronchial wall. As it appears unlikely that a single fibre gives rise to several sensory endings he concludes that they are rather of the nature of "intrinsic preganglionic fibres," and that stimulation of a single sensory ending will, by means of an axon reflex, cause a local capillary response, and, in addition, a more extensive response via the collaterals and the nodal ganglia. Such a mechanism (and it has the merit of being supported by careful histological evidence) would make clearer the widespread effects (for example, secretion of mucus, contraction of the bronchial muscles) which accompany the coughing reflex when a local irritant stimulates the bronchial mucous membrane.

THE SEMON LECTURE

The Semon Lecture for 1934 was delivered on November 1st by Mr. Herbert Tilley. The occasion was exceptional, because it is an open secret that Mr. Tilley was reluctant to accept the lectureship. This reluctance arose in part from the fact that, since the lectureship was established in 1911 during the lifetime of Sir Felix Semon, Mr. Tilley has always taken the chief part in its management, and a natural delicacy restrained him from assuming the mantle of lecturer himself. The unanimous desire of all connected with British laryngology that its most popular personality should not be debarred from the honour of the Semon lectureship has at length induced him to overcome these scruples and to yield to the universal demand. The audience therefore had the double satisfaction of having the lecturer whom above all others it wished to hear on this occasion, and of listening to the wisdom gained from a ripe experience in the subject of which he has made a long and particular study. As the management of the lectureship was entrusted to the University of London, the many services of Mr. Tilley both to the University and to laryngology have received an appropriate recognition, for in addition to his preoccupation with the Semon lectureship they include a large share of responsibility in the establishment of the M.S.London with laryngology, and of the D.L.O of the Royal Colleges. Mr. Tilley dealt with his chosen subject from a broad standpoint, but he was careful to stress some aspects which even now do not always receive sufficient recognition. The spread of infection from the antrum is not always by surface transmission, by which direct spread to adjacent tissues is implied, but also by vascular convection, which includes transmission by both lymph and blood vessels. The lecturer illustrated this by radiographs showing spread of infection in this way from the antrum to the tissues of the mediastinum. This chronic catarrh of the antrum is a condition which is not uncommonly overlooked, and its influence may extend to distant parts. Mr. Tilley also laid emphasis on a pathological condition which is often not included in the usual descriptions of the various changes affecting the antrum. When the periosteum becomes implicated the infection passes by vascular channels into the osseous capsule of the sinus. It is, in his opinion, the failure to recognize this condition (which Mr. Tilley was able to demonstrate from

pathological material prepared by Dr. Albert Gray at the Ferens Institute of the Middlesex Hospital) that accounts for many post-operative recurrences and failures to obtain complete healing. A study of the lecture, of which a full report appears at page 869, will show that Mr. Tilley succeeded in extracting much interest and some novelty from an apparently rather threadbare subject.

SNAKE VENOM FOR HAEMOPHILIA

Haemophilia is a condition which causes much misery to patients and their relations, and anything which can be done to relieve it is to be welcomed. The prominent feature in the condition is the time which the blood takes to clot, and the poor quality of the clot which is formed. Hitherto no styptic has proved of any value in stopping the haemorrhage, and it has often been necessary to perform a blood transfusion lest the patient should bleed to death after a trivial injury. The preliminary report of the recent work by Dr. R. G. Macfarlane and Dr. Burgess Barnett[1] suggests that a styptic has been found which may be of great value. It has been known since the work of C. J. Martin in 1893[2] that when snake venom was injected into animals it might cause extensive intravascular clotting. G. Lamb in 1903[3] showed that it would also clot citrated blood. Macfarlane and Burgess Barnett, at the suggestion of Professor H. Hartridge, have now demonstrated that snake venom has a very powerful action on haemophilic blood. They have found that the venoms of all kinds of vipers coagulate blood, but that they differ considerably one from the other in various ways. The venom of Russell's viper clots haemophilic blood more quickly than any other venom, although it is not so efficacious as other venoms in clotting citrated blood. The amount required is very small: one drop of a 1 in 1,000 solution of the venom, when added to ten drops of haemophilic blood, caused clotting in seventeen seconds, and a 1 in 100,000 solution caused clotting in sixty seconds, although the blood itself took thirty-five minutes to clot. The actual clot is tough and firm, and quite unlike that of haemophilic blood clotting by itself. Much work has already been done to enable this discovery to be used for human beings. It has been observed that when the venom is injected into animals in a dilution of 1 in 1,000 it does not cause haemorrhage, oedema, ulceration, or destruction of the tissues. When gauze soaked in venom was applied to a wound no delay in healing occurred, as compared with the control animal. The solution is easily sterilized by filtration through a Berkefeld filter, and does not lose any of its strength in this procedure. The venom maintains its potency unchanged when it is dry, but it soon deteriorates in dilute solution. The tests on human beings, not very numerous as yet, are very striking. In a normal person haemorrhage from a tooth socket and tonsil bed and capillary oozing in an abdominal wound are controlled at once. Three patients with haemophilia have been treated, two for tooth extraction and one for a wound. In each case the haemorrhage stopped at once when the tooth socket and wound were lightly plugged with gauze soaked in venom 1 in 100,000. The haemorrhage recurred some twelve or twenty-four hours later, but ceased again on a further application. It does not seem likely on the present evidence that the venom will have any effect in reducing the coagulation time to normal and so cure the disease, and it is also doubtful whether it can be employed for checking the haemorrhage into joints and subcutaneous tissues. Nevertheless an important step forward has been taken by the discovery of a substance which will control the local haemorrhage which has caused the death of so many patients. The authors are to be congratulated on their discovery, and it is to be hoped that some way will soon be found of enabling a preparation of venom to be available in all hospitals, and for all doctors who look after haemophilic patients.

[1] *Lancet*, November 3rd, p. 985.
[2] *Journ. Physiol.*, 1893, xxxii, 207.
[3] Scientific Memoirs by Officers of Medical and Sanitary Departments of the Government of India, New Series, 1903, No. 3.

VARIATIONS IN THE NORMAL BLOOD COUNT

In an earlier issue this year (March 31st, p. 586) we commented on the findings of R. H. Simpson[1] in a study of the normal blood count. The object of this work was to determine the limits of variation in the normal count in order rightly to assess the significance of early changes in the blood of radiologists. His findings were that the leucocyte count in the normal subject varies within wider limits than are generally recognized, and that these fluctuations apparently follow none of the causes to which they are usually assigned, but occur rapidly and capriciously. The steps taken to verify the accuracy of the method used, including simultaneous counts yielding concordant results, betrayed no inherent liability to error such as would invalidate the conclusions drawn. The only possible deduction from these findings was that the limits of the normal leucocyte count must be set more widely, and that no single count exhibiting minor variations can be credited with any certain significance. In subsequent correspondence this conclusion was contested, and it was suggested that the method used by Simpson for counting the total leucocytes is liable to inaccuracy ; in particular, attention was drawn to the work of Ponder, Saslow, and Schweizer,[2] who studied the relation between the number of cells counted and the reliability of the results obtained. A subsequent publication by Harvey and Hamilton[3] lends support to the attitude of these critics. It deals with the results of one hundred counts on each of two subjects, one of whom was normal, the other an asthmatic. These results are analysed and presented in a number of different ways, of which the most illuminating is the ogive graph: this indicates at a glance not only the extreme limits of variation but the frequency of intermediate values. In the strictly normal subject the extremes of the total leucocyte count were 5,500 and 8,500 per c.mm., and the great majority of the counts fell within narrower limits than this ; in the asthmatic the limits were wider, the lower being 7,000 and the upper 15,000 per c.mm. An important fact is that no count fell below 5,500 per c.mm. ; a leucopenia determined by these observers would therefore possess a significance denied by Simpson for his own observations. Since it has been stated by Mottram[4] that a

[1] *Brit. Journ. Radiol.*, 1933, vi, 705.
[2] *Quart. Journ. Exper. Physiol.*, 1931, xxi, 21.
[3] *Edin. Med. Journ.*, 1934, xli, 465.
[4] *Lancet*, 1931, i, 42.

lymphocyte count of less than 1,500 per c.mm. is a danger signal in radiologists, it is of interest that in Harvey and Hamilton's normal subject this count was below this figure on several occasions ; perhaps the limit should be placed lower. In any case the difficulty of interpreting early changes in the blood of radiologists, although distinctly reduced by assuming something nearer constancy in the leucocyte count, is still considerable, and seems to call for repeated counts before serious action is taken. With one of Harvey and Hamilton's conclusions not everyone will agree—namely, that the examination of a film alone can to some extent take the place of a complete count. It is true that a very rough estimate of the total leucocyte count can be made from a well-made film, but the ability to make good films rarely exists without the opportunity and capacity to perform a total count as well, and to countenance this omission seems a retrograde policy.

CHILD GUIDANCE IN LONDON

In the four and a half years of its existence the London Child Guidance Clinic has now dealt with nearly 1,900 cases. In the beginning its organization was largely experimental, but it has now evolved the lines upon which it intends to progress. It was designed from the outset to serve two functions—the treatment of children and the training of students—and early in 1933 it was divided into two separate departments for treatment and training. Each child is treated by a team consisting of a psychiatrist, a psychologist, and two social workers ; the same psychiatrist handles each case throughout to ensure continuity of treatment, and the unit members deal directly with the doctor, teacher, or parent referring the case. The course of training includes lectures, discussion groups, and seminars held at the London School of Economics, and supervision of the practical work of the clinic. The report of the clinic for the years 1932 and 1933 states that students who complete this course are being widely accepted for responsible posts where a trained social worker is required, for it is being realized that some such training is necessary to equip workers in psychiatric and child guidance clinics and out-patient departments of hospitals. The clinic also gives candidates for the academic diploma in psychology of the University of London their practical work in child guidance, and supervises and instructs students attending the course in child development at the Institute of Education, who come to the clinic for observation of play groups and for instruction in remedial teaching. The division into two sections has increased the efficiency of both aspects of the work. Members of the clinic have travelled all over England delivering lectures on child guidance, with the result that knowledge and acceptance of the subject have widely increased. The number of children seen at the clinic has steadily grown, and in 1932 an extra psychiatrist and a social worker were appointed. The children have come from all over the British Isles, but the practical difficulties in the way of lodgings near the clinic for regular attendance are great, and satisfactory treatment will be possible for all only when clinics are available throughout the country. During the two years under review the clinic dealt with 973 cases. Children tend to be referred at an increasingly early age—a satisfactory development. Many are sent from the schools and school care committees of the London County Council, and by magistrates and probation officers. A considerable number of cases attended only for examination, and a large number were given some special type of service, including individual psychotherapy, remedial teaching, or education in play groups. The clinic claims to have secured adjustment in the mentality of about half the children it has treated. About a quarter are discharged partially adjusted, and about one-fifth cannot be improved. These results seem fully to justify the expenditure of time, energy, and ingenuity. The progress of child guidance work in this country has been slower than in some others. This is not altogether a bad thing in an enterprise which is so novel and which is capable of such extremes of theory and experimentation. There is a refreshing absence in the report of the effervescence which is apt abroad to discourage sympathizers with the movement. The clinic shows great promise of success in this important necessity of modern civilization. This particular method of tackling the problems of modern childhood came to us from the other side of the Atlantic, under the auspices of the Commonwealth Fund. The time has now come when that Fund may legitimately say, and does in fact say, that the clinic has either proved its worth or its worthlessness, and that the people of this country must either support it or close it down.

DIXON MEMORIAL LECTURE

Following the death of Walter Ernest Dixon, M.D., F.R.S., of Cambridge in August, 1931, a memorial fund was collected, and the committee thereof, under the chairmanship of Sir William Willcox, handed to the Royal Society of Medicine a capital sum in order to establish a lectureship in therapeutics and pharmacology in memory of Professor Dixon. The first Dixon Memorial Lecture will be given by Sir Henry Dale, M.D., F.R.S., in the Barnes Hall of the Royal Society of Medicine on Tuesday, December 11th, at 5 p.m. The subject of his address will be " Pharmacology and Nerve Endings." No tickets of admission are necessary.

GENERAL MEDICAL COUNCIL ELECTIONS

The result of the election of a direct representative for England and Wales has been that Mr. N. Bishop Harman, F.R.C.S. (with 10,980 votes), has been elected for five years from November 26th, 1934. The unsuccessful candidate, Dr. E. A. Gregg, obtained 3,702 votes. Sir Norman Walker and Dr. Leonard Kidd have been returned unopposed as direct representatives for Scotland and Ireland respectively. We would remind readers once more that voting papers for the election of a second direct representative will be issued on November 13th. Sir Henry Brackenbury has been nominated for re-election. The letter announcing his candidature for re-election was printed in the *Supplement* of October 13th (p. 193). The other nominations received by the Council for this vacancy are Dr. E. A. Gregg and Dr. Mabel L. Ramsay.

The Medical Research Council has appointed Mr. F. J. Marquis, B.Sc., and Professor W. W. Jameson, M.D., F.R.C.P., to fill vacancies in the membership of its Industrial Health Research Board.

CHRONIC PYOGENIC INFLAMMATION OF MAXILLARY ANTRUM AND OTHER ACCESSORY SINUSES

SEMON LECTURE BY MR. HERBERT TILLEY

The Semon Lecture, under the auspices of the University of London, was delivered in the Barnes Hall of the Royal Society of Medicine on November 1st by Mr. Herbert Tilley, M.D., F.R.C.S., consulting surgeon, Ear and Throat Department, University College Hospital, whose subject, illustrated by many lantern slides, was "Chronic pyogenic inflammation of the maxillary antrum and other nasal accessory sinuses: Some clinical manifestations of its pathology." Mr. W. M. Mollison, president of the Laryngological Section of the Royal Society of Medicine, presided.

Mr. Herbert Tilley, after a graceful tribute to the late Sir Felix Semon, by whom, he said, more than by any other one individual, the foundations of the honourable position of British laryngology were truly laid, first reminded his audience of some of the fundamental anatomical features and physiological attributes of the nasal accessory sinuses or air cells. He believed there was no region of the body where normal topographical relationships were subject to such frequent and almost limitless variation as might be presented by these sinuses. They reminded him of the Irishman's definition of bridge as "A game with no rules, but a mighty lot of exceptions." It was this anatomical complexity which frequently determined one or more of the clinical manifestations of an inflamed sinus.

Defence Mechanisms and Transmission of Infection

So far as present knowledge went, the mucous membrane of an accessory sinus had three defensive agents: (1) the thin film of mucus which enmeshed such invaders as atmospheric dust and micro-organisms; (2) the cilia of the epithelium which tirelessly lashed the mucus towards and through the "ostium" into the nasal cavity, from which it was driven by the same mechanism into the nasopharynx; and (3) secretions which found their way to the surface from the glandular nodules and other cells of the stroma. The lecturer dwelt on these factors of mucosal defence, first, because they were the foundations in which alone lay the explanation of the clinical manifestations of inflammation of the nasal cavities and their paranasal air cells, and, secondly, because the occasion afforded him an opportunity of entering a plea for a conservative attitude when surgical measures were called for in the treatment of such a delicate protective mechanism, which in its structure and functions had no counterpart elsewhere in the body.

It was common knowledge that when pyogenic infection had become established in the mucous membrane of an accessory nasal sinus its intrinsic or immediately local signs and symptoms might be accompanied or even overshadowed by evidences of transmission of organisms or their toxins or both to near or remote regions. Further, the clinical manifestations of such dissemination would largely be determined by the channel through which the infective agents reached their destination—namely, "surface transmission," implying progressive involvement of tissues in immediate and direct anatomical continuity with those of the already infected sinus muco-periosteum, or "vascular convection," an expression which he preferred to "blood-borne," because it included the lymph vessels. When the superficial tissues of a sinus muco-periosteum were involved, infection tended to spread by tissue continuity, while a more rigid confinement of sepsis in the deeper layers of the stroma, the periosteum, or in the bone would more probably be conveyed by vascular channels.

Antral Inflammation of Dental Origin

The lecturer went on to describe briefly the course of acute antral inflammation of dental origin. Progressive caries in the crown of a bicuspid or molar tooth eventually reached and infected the contents of its pulp cavity; the consequent inflammation spread to the adjoining root canals, and from these, by way of their apical foramina and root canaliculi, to the periosteum of the root sockets and the cancellous bone of the alveolus in their immediate neighbourhood. In the course of these changes a septic granuloma or apical abscess might develop above the infected root, and by progressive inflammation and absorption of the surrounding cancellous bone reach the mucous membrane lining the alveolar groove of the antrum, ulcerating through, and establishing antral infection. It had long been the lecturer's conviction that extensive pyorrhoea of a tooth socket might alone be responsible for the conveyance of infection by vascular channels to the air cell. For a long time his was a solitary voice in this matter, but later the possibility of vascular transmission of infection from a septic root socket to the antrum had become accepted.

A septic tooth which had slowly become devitalized might infect the antrum without any preliminary acute dental symptoms. It was a good rule, therefore, to have the teeth radiographed in all cases of acute and chronic antral inflammation before deciding the extent to which a dental factor should influence treatment. During dental infection the patient's general condition was often satisfactory, and the lesion in the air cell was limited to ulceration of a comparatively small area of muco-periosteum, through which the abscess contents escaped. The rest of the mucous membrane might only be inflamed superficially, and probably not to such a degree as entirely to inhibit ciliary activity. As a consequence of this, inflammatory secretions passed with comparative freedom into the nasal cavity. Removal of the offending tooth, followed by irrigations of the sinus, would, as a rule, soon restore the tissues to their normal condition. It followed that when symptoms of inflammation developed in and around an upper bicuspid or molar tooth appropriate treatment should be instituted. Prolonged delay might result not only in antral infection, but, what was more important still, in the involvement of a comparatively extensive area of cancellous bone in the alveolus which, in the event of ultimate tooth extraction, would often render futile all efforts to close a possible bucco-antral fistula. In the meantime, general symptoms indicative of a mild chronic toxaemia or some distal and more or less localized manifestation of "focal sepsis" might have developed.

Intranasal Infection of the Antrum

If an antrum were infected by the virulent organisms of one of the acute specific fevers the chief pathological features would often be a generalized and intimate inflammation of all the constituents of its muco-periosteal lining and the nasal fossa of the corresponding nasal cavity, more particularly tissues in and around its middle meatus—a condition which hindered free drainage from the sinus. Within the antrum the consequent congestion and oedema might be so pronounced as entirely to obliterate its lumen, and by inhibiting ciliary action add a further hindrance to the escape of inflammatory secretions.

The early stages of infection, when general oedema of the muco-periosteum was pronounced, were manifested by severe pain in the cheek and surrounding regions coupled with nasal obstruction on the same side. An endeavour to relieve these symptoms by puncture irrigation of the antrum would not infrequently fail if the end of the cannula were embedded in the jelly-like mass of inflamed tissues. This difficulty might sometimes be overcome by applying cocaine and adrenaline solutions to the swollen and obstructing tissues of the middle meatus, and then scarifying them freely. Children suffering from an acute specific fever were by no means exempt from infection of the paranasal air cells, but, of course, were often too young to draw attention to, or describe, local symptoms,

and such clinical manifestations of sinus infection as nasal obstruction and muco-purulent discharge from the nostrils were liable to be regarded as due to adenoids.

Chronic Antral Catarrh

Mr. Tilley defined this as a low-grade infection of the superficial layers of the mucous membrane accompanied by excessive secretion of mucus or muco-pus, but not by general symptoms of toxaemia or local manifestations of blood-borne infection. In its simplest forms the most characteristic feature was a semi-translucent thickening of the mucous membrane, which was particularly evident over the alveolar groove, in the angular recesses of the air cell, and in the neighbourhood of its "ostium." In more advanced conditions oedema-like swellings or definite polypoid projections were usually present. The chief histological features in the early stages were a certain amount of surface-cell desquamation, extensive serous infiltration of the subepithelial connective tissue, distension of its lymphatic spaces and glandular elements, and perivascular concentration of mononuclear and polynuclear cells. The chief, and often the only, symptoms were an excessive discharge of mucus or muco-pus from the nose and some degree of nasal obstruction. Transillumination was particularly unreliable in diagnosing mild types of chronic antral catarrh, and most misleading if too powerful a lamp was used; puncture irrigation was much more informative, but did not give a clue to the degree of involvement, and here came in the inestimable value of Proetz's "displacement" method, followed by radiography of the opaque fluid. A mild degree of mucous membrane involvement would probably respond to from six to twelve irrigations or even to a course of autogenous vaccines, while polypoid transformation could only be treated successfully by radical intervention through the canine fossa, with the establishment of permanent antro-nasal drainage.

If it seemed that undue attention had been given to this mild type of chronic antral inflammation the lecturer's excuse was that of all forms of sinus infection it was, in his experience, the one most frequently overlooked, because the patient's diagnosis of "chronic nasal or post-nasal catarrh" was too frequently accepted as an entity without further confirmation, but recurrent infections almost inevitably led to definite pyogenic infection of the air cells. In any case the catarrhal symptoms were annoying. Temporary symptomatic relief might be afforded by nasal washes followed by a nebulized oily spray containing menthol or chloretone. But if valid reasons had been given for regarding such symptoms as typical manifestations of mild infection of the paranasal sinuses, it was obvious that these air cells, and particularly the antra, should be carefully investigated in every case.

Pathology and Clinical Evidence of Pyogenic Infection

After some remarks on dietary defects as a predisposing factor in reducing resistance against microbic infection, in which he quoted McCarrison and other authorities, Mr. Tilley turned to a discussion of the pathology, saying that when chronic pyogenic infection had become established in any of the air cells, the histopathology of the muco-periosteum would frequently reveal that the morbid changes were not always uniformly spread throughout the structure, but rather tended to predominate in one or more of its constituent elements. He described the four categories in which le Roy Schall placed the pathological changes—namely, oedematous, infiltrative, fibrotic, and cystic; and to these he himself added a fifth—namely, that in which the infection, having implicated the periosteum, had passed by vascular channels into the bone tissues of the sinus capsule. He then related the clinical manifestations to these five types. The signs and symptoms of the oedematous type were those described in dealing with chronic catarrh of the antrum, adding only that any distal clinical manifestations to which it might give rise were due to surface rather than to vascular transmission of infection. The infiltrative type included a large majority of the cases of chronic pyogenic sinusitis so familiar to nasal surgeons. If infection were limited to the more superficial tissues of the muco-periosteum there would often be present, in addition to the ordinary local signs and symptoms of chronic antral suppuration, those which resulted from surface transmission of infection to adjacent or more distant regions. If and when superficial transmission of antral infection passed beyond the confines of the nasal cavities and their air cells, it might reach the conjunctivae by means of the lachrymal ducts, the nasopharynx, the middle-ear clefts via the Eustachian tubes, and, passing downwards, involve the mucous membranes of the pharynx or larynx, lower air passages, and stomach.

The essential feature of the fibrotic and cystic types was fibrosis of the mucous membrane, with diminution of its cellular and glandular elements, the changes being most obvious in the deeper layers of the muco-periosteum. The local symptoms of this type of chronic pyogenic sinusitis were so familiar to nasal surgeons as to call for no comment, and the same assumption might be made concerning systemic symptoms of a toxaemic nature and such distant and localized manifestations as neuritis, myositis, certain types of arthritis, and cardiac disabilities.

Operation for Infective Sinusitis

It must be within the experience of all nasal surgeons that many cases had been cured by a simple intranasal antrotomy, but for many years it had seemed to him that such results were due to luck rather than good management. The operator was working in the dark, and could not see the nature or extent of the disease which it was his duty to remove. These essentials could only be obtained by a full exposure, such as was afforded by the Caldwell-Luc procedure in antral sinusitis, or an external operation, such as Howarth's, for combined frontal sinus and ethmoid suppuration. That complete exenteration of an infected mucous membrane from an accessory nasal sinus might be followed by necrosis of bone or some other complication was a groundless fear, for it was known that within two or three months a new normal ciliated muco-periosteum would replace that which was removed. It was a little more than thirty years ago (1903) that he himself had emphasized this method of repair, in a paper before the old Odontological Society, and during the past ten years it had been amply verified by histopathological research carried out by a number of workers.

Post-operative Recurrences

Finally, the lecturer turned to what he described as the most important phase of his task—namely, to endeavour to answer the question why well-executed operations for chronic pyogenic sinusitis were not infrequently followed by a recurrence of symptoms. During the last few years he had become more and more convinced that the continuation or recurrence of symptoms after the operative treatment of this condition was due to a residual infection in the bone tissues of a sinus capsule, and that it was one of the most potent foci for the vascular transmission of septic organisms and their toxins. This view had received less practical recognition from rhinologists than from dental surgeons, and the present occasion seemed opportune for laying further emphasis on this factor. If and when pyogenic organisms could be demonstrated in the inflamed osseous tissues, such a residual infection would surely explain why free drainage and complete removal of the muco-periosteum might not suffice to prevent a recurrence of symptoms. Material additional to his own was collected from all the nasal sinuses and investigated by Dr. Albert Gray in the Ferens Institute of the Middlesex Hospital. Mr. Tilley showed some convincing photomicrographs of the histopathological sections so skilfully obtained.

He was not aware of any clinical manifestations of chronic "silent" osteitis of an air capsule which were pathognomonic of that condition, but it might be suspected when spontaneous local pain was a prominent symptom or if the bone was tender to pressure. It

was in such cases that general or localized evidence of blood-borne infection might overshadow local manifestations of suppuration.

With regard to treatment, if on removing a pyogenic membrane from a nasal accessory sinus, pus or even pin-point collections of it were seen beneath the periosteum, the adjoining bone should be uncapped, and if found infected removed until healthy osseous tissue was reached. If no evidence of subperiosteal osteitis were detected during the primary operation, and there was recurrence of symptoms, bone infection should be inferred and prompt measures taken to remove it. Nasal washes, local applications, and all such meddlesome interference would be of so little avail that the long-suffering patient might well exclaim with the Psalmist, "My bones are vexed, my soul also is sore vexed," and the cynic might be prompted to utter again that opprobrious dictum, "Once a sinus operation, always a sinus operation."

CHARING CROSS HOSPITAL MEDICAL SCHOOL

INAUGURATION OF CENTENARY APPEAL

The first public appeal since its foundation one hundred years ago was launched by the Charing Cross Hospital Medical School at the annual presentation of prizes, held at the hospital on November 1st. The inaugural address was to have been given by Air Marshal Sir John M. Salmond, but owing to illness his place was taken by Air Vice-Marshal C. A. H. Longcroft. The proceedings were presided over by Major Colin Cooper. The report of the dean (Mr. Eric A. Crook) was congratulatory to many members of the staff and students on receiving distinctions. It also mentioned, among other items of interest, that this year the Huxley Memorial Lecture had been delivered by Professor Julian Huxley, grandson of T. H. Huxley, who was one of the most famous of the school's past students, David Livingstone being another.

Inaugural Address

Air Vice-Marshal Longcroft, after presenting the awards to the successful students, read the speech which Sir John Salmond had intended to deliver. He said that for a hundred years Charing Cross Hospital Medical School, by its teaching and assiduous research work, had advanced the cause of science without any public appeal. The founder was Dr. Benjamin Golding, who, in 1823, conducted a general infirmary and dispensary in Villiers Street, close to the present hospital. The foundation stone of the present Charing Cross Hospital was laid eight years later, and the hospital was formally opened at the beginning of 1834 by the reception of in-patients; the medical school was inaugurated in the same year. He added that it was a tribute to the foresight of the founder that when the Royal Charter was granted fifty years later no alteration was found necessary in any detail of the original constitution. The financial and administrative regulations made so long ago for combining the hospital and medical school had stood the test of time and were still operative. From twenty-two students a hundred years ago the number had grown until there were now 150 full-time students on the books, and the school had its own building, laboratories, lecture theatre, and museum. No organization of value to the common weal, Sir John Salmond added, could stand still; it must either expand to meet the ever-increasing requirements of the modern world or it must contract and fade away. On the technical side, with the existing facilities, only the requisite minimum of instruction could be given in pathology. Nor could a building established sixty years ago meet the essential requirements of to-day. Therefore an appeal was being made for £7,500 to extend the school building; £2,500 to liquidate the debt; £10,000 to complete the establishment of a chair in pathology; £20,000 for the provision of a hostel for students; and £10,000 towards the endowment of scholarships. He reminded the company that Huxley, of immortal fame, might have languished as an apothecary's assistant had it not been for the opportunity of gratuitous tuition. Unlike other appeals for hospital facilities, said Sir John Salmond in conclusion, this first public appeal for the modest total of £50,000 was to strengthen and increase the flow of healing waters at their source.

Vote of Thanks

A vote of thanks to Air Vice-Marshal Longcroft was proposed by Dr. Gordon M. Holmes and seconded by Mr. Philip Inman, managing governor of the hospital; a further vote of thanks to the chairman was proposed by Mr. J. Bright Banister and seconded by Mr. Norman Lake.

Major Colin Cooper, in reply, said that the appeal would be launched to bankers, business houses, and public institutions, to all friends of Charing Cross Hospital, and to the great charitable British public. It was most important that the progress made by Charing Cross Hospital during the last hundred years should not be arrested in this generation. As an appeal should have a good send-off, he desired, in memory of those who fell in the Flying Corps during the war, to start it with £1,000.

The guests were afterwards entertained to tea in the refectory of the medical school, and a demonstration was given in the Institute of Pathology. An excellently produced appeal brochure was distributed, containing illustrated historical notes on the hospital and school, and specifying, in more detail, the objects of the appeal. With regard to the provision of hostel accommodation, which is one of the objects of the appeal, it is stated that there exists near the school a site on which a building could be erected to accommodate thirty-five or forty students. In connexion with the establishment of a chair in pathology, which is another of the objects, a fund already bequeathed for this purpose is expected to produce £600 a year, which will have to be supplemented in order that the occupant of the chair may receive a minimum salary of £1,000. The £10,000 asked for towards the endowment of scholarships will be used to provide for the award of entrance scholarships of £50 each, or £10 a year for five years; open scholarships of £75 each, or £25 a year for three years (covering the clinical period only); and clinical scholarships of £120 each, or £40 a year (equal to the whole of the tuition fees) for three years.

PREPARATORY SCHOOL SCHOLARSHIPS FOR SONS OF MEDICAL MEN

We take this opportunity of drawing the attention of medical men to the annual award of two scholarships of £100 each at Port Regis Preparatory School, Broadstairs, Kent. These scholarships were recently founded by Sir Milsom Rees, and the next examination will be held on March 5th, 1935. Candidates must be under 9 years of age at the time of competing, and the scholarships are normally tenable till the holder leaves the school. They will be selected at an interview in London from among those boys who have done best in some simple examination conducted in or near their homes.

Applications for these scholarships must be addressed to the Head Master, Port Regis School, Broadstairs, to reach him not later than February 20th, 1935. Full particulars may be obtained from him.

At a meeting of the Continental Anglo-American Medical Society held in Paris on October 6th, with the vice-president, Dr. Leonard Robinson, in the chair, it was agreed that a scientific programme should be given on the Riviera at a time and place to be decided by members practising there, preferably during the Christmas vacation, and that a clinic should be given at the American Hospital by the Paris members during the meeting next May. The exact date of these gatherings will be announced later. British and American graduates travelling, or residing in the neighbourhood, are invited to attend.

THE BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

ANNUAL DINNER

The fourth dinner of the British College of Obstetricians and Gynaecologists was held at Claridge's Hotel on November 5th, Dr. JOHN S. FAIRBAIRN presiding.

MR. BALDWIN'S SPEECH

The toast of "The College" was proposed by Mr. Stanley Baldwin. He said that the College hoped to do for obstetrics and gynaecology what the College of Physicians did for medicine and the College of Surgeons for surgery. Until recently obstetrics and gynaecology had had no body to speak on its behalf. There was no doubt that, with all the social work that had been done in connexion with sanitation, housing, and old-age pensions, the question of maternal mortality and child welfare had come before the country in a way it had not done previously, and not before it was necessary. During the present century the general death rate had been reduced by a third, as had the tuberculosis mortality, and infant mortality had been reduced by nearly one-half, but the maternal death rate was slightly increasing. The Departmental Committee on Maternal Mortality had found that one-half of the maternal deaths in this country were preventable. That was a terrible indictment. For all the deaths that occurred there were, as a result of neglect, also the disabilities in later life among women who had borne children. He had been told that if all the women in Britain received proper attention before, during, and after childbirth the occupation of beds in the women's wards in hospitals would be reduced by one-half. There were black spots in this country where maternal mortality had reached appalling proportions.

The College might be of invaluable service to the country in connexion with hospitals for women and welfare centres for children. The standard of the College was high and must always be high, and he would urge it to seek closer co-operation with the Medical Research Council, and to direct research into the question of maternal mortality. It seemed to him as a layman that there might be some factor to account for the high figures of mortality in childbirth which had hitherto eluded their vigilance, and that there must be something to be discovered. He would say to them: "Get to it." Also, he wanted to see the day come when the best form of anaesthesia for use in childbirth should be within the reach of every woman in the kingdom. In conclusion, Mr. Baldwin said there was an immense amount of work to be done to reduce maternal mortality, and that if the Government could help in any way it would be glad to do so; somehow or other it meant to clear this blot off the national slate.

THE RESPONSE

In response to the toast the President, Dr. FAIRBAIRN, on behalf of the College, thanked Mr. Baldwin for coming to dine with them. A young society like theirs, with only a future before it, needed some support from the State. During the five years of its existence the College of Obstetricians and Gynaecologists had made good progress, and now had a house and a library of its own. This in large measure had been made possible by their benefactor, Lord Riddell. The desire to be of public service had been in the minds of the founders of the College and its first council, but of necessity they had been much preoccupied with questions of organization. Due tribute must be paid to the former Obstetrical Society of London, now the Section of Obstetrics of the Royal Society of Medicine, for its good work in connexion with the maternity services and the education of midwives in this country. Dr. Fairbairn then outlined, in some detail, the various activities of the College, and referred to the institution of the diploma, which was to encourage general practitioners to act as consultants in midwifery in those areas in which specialists were not available, particularly in the black areas in the North of England.

The toast of "The Guests" was proposed by Professor C. G. LOWRY in a speech happily blended with wit and good sense. Sir GEORGE BUCHANAN, Master of the Society of Apothecaries, replied.

Nova et Vetera

ANCIENT HINDU-ARYAN MEDICINE

The following is an abridged version of the presidential address by Dr. E. W. Lewis which he gave to the Lancashire and Cheshire Branch of the British Medical Association at its recent annual general meeting.

Following my house-surgeoncy days, I spent seven years in hospital work in South India. Now and again I came across customs and treatments that made me interested in the history of Indian medicine. I soon discovered that from 1000 B.C. until A.D. 100 the condition of medical culture and teaching, and the success and extent of medical treatment, were higher than in any other country. Why did India not continue to develop her medical learning? Why did the medical knowledge of the Indo-Aryans retrogress?

Three epochs are definable: the Vedic, extending from the first migration of the Hindus into the Punjab to about 800 B.C.; the Brahminic, representing the Indian Middle Ages, the Golden Age of Indian medicine; and the third, which began about A.D. 100, with the Arabic invasions. The Rig-Veda (about 1500 B.C.) contains definite medical instruction, and reveals the origin of medicine in theurgy and empiricism. There is an attempt to distinguish such conditions as vertigo, dropsy, epilepsy, heart disease, jaundice, and hemiplegia. On the surgical side the extraction of arrows, the dressing of wounds, the making of artificial limbs, and castration are dealt with. Medical treatment was carried out by means of charms and medicinal herbs. Among the earliest remedies described were those for promoting conception, aphrodisiacs, and abortifacients. Isopathic and homoeopathic principles were in use, such as the employment of yellow plants in jaundice; hydrotherapy held high place. The Brahminic epoch was remarkable for the highly esteemed class of physicians, independent of the priesthood. These men were scientifically instructed, belonged to the high mixed caste of Ambastha or Vaidya, and were descended from Brahmins on the father's side. There was also an inferior class of assistants, the Vaisyas. Anatomy, materia medica, hygiene, dietetics, and surgery reached a high standard. With the coming of the Arabic invaders the theories and practice of Ayur Vedic medicine were submerged by the Yunani system. Progress in investigation ceased, the standard of practice and training declined, and incapable men and quacks multiplied.

The second epoch deserves fuller consideration. The two chief sources of information are the books written by Charaka and Sushruta. The choice of the profession of medicine was conditional on good descent, preferably from a medical family; manual dexterity; and the possession of certain physical as well as moral and intellectual endowments. Training lasted six years, was based upon a recognized and approved textbook, and comprised the learning of precepts, clinical instruction, visiting the sick, and undertaking surgical procedures. It was laid down that medicine and surgery had to be mastered equally, since "the physician who lacks knowledge of one of these branches is like a bird with only one wing." The physician was enjoined to widen his knowledge through intercourse with his professional brethren, so that the light of wisdom should not be hidden from him. The instructions regarding fees are interesting. "Price will

vary with the rank and condition of the patient. Money will be the recompense bestowed by the rich ; friendship, reputation, increase of virtue, prayers, and gratitude will be that of the poor. When a Brahmin or a religious mendicant, a relative, a humble and good friend, or one without relations consults a physician, he must not accept of any pecuniary recompense ; his reward in such cases will be an increase of knowledge and the gratification of his desires in having had an opportunity of performing a good action." Warning is given repeatedly about treating incurable cases. For instance, in treating serious abdominal conditions, the cause of which was doubtful, an Indian physician was instructed before commencing treatment to inform the friends that the disease was incurable ; then he might try the effects of remedies.

All Indian medicine was founded on the writings of Charaka and Sushruta ; later writings follow them, and are content to be commentaries on the original work and to complete and improve these through fresh experience without interfering with the theoretical groundwork or the old-time formulas. No work could receive acknowledgement or be accepted unless it could claim to have been the result of Divine revelation.

Standards Attained

Anatomy.—Hindu philosophers, although opposed by strong prejudice, entertained sound and philosophical views respecting the uses of the dead to the living, and were the first scientific cultivators of practical anatomy. No attempt was made to preserve the bodies by embalming or arterial injections, but rules were laid down as regards cleansing and the promoting of decomposition. The surface of the body was then removed by a brush made of reeds, hair, or bamboo bark, the skin, flesh, and adjacent structures being carefully observed before removal. With this method of dissection it will be readily seen that Indian anatomy did not consist of real intimate knowledge, but merely of an enumeration and classification of the constituent parts of the body. Nevertheless, some idea of the organs was obtained, and bones, ligaments, and joints were described, though the actual course of such structures as veins, arteries, and nerves were not known. Indeed, nerves, vessels, and cavities were all confounded. Something was known of the spinal cord. The central canal, with its continuation with the lateral ventricles of the brain, the cerebral convolutions, and the distinction between white and grey matter, for instance, were indicated in the Shiva Sanhita.

Physiology.—Such imperfect knowledge of anatomy gave rise to highly speculative physiology, in which observations were accounted for by theories. Hindu sages observed the great influence of the fluids in disease, and, imperfectly acquainted with the structures and uses of the various parts of the system, endeavoured to explain the functions of the organs by the action of fluids upon them, reducing their physiological opinions to an ingenious system—the humoral physiology—on which the whole of ancient Hindu medicine was founded. The fundamental parts of the body were *Vayu* (wind), *Pitta* (bile), and *Kofa* (phlegm). " As the moon sheds moisture and abstracts the sun's rays, which dry up and bestow energy upon the earth, and as the air moves from place to place, so does phlegm bestow moisture, bile withdraws it by its heat, and wind wafts it about the microcosm or animal body." This theory, derived from the Hindus, was for many ages universally believed, and adopted by the Egyptian and Greek priesthoods. The essential parts of the body were noted as: chyle ; blood ; *Mansa*, or flesh, produced by the *Vayu* thickening the blood ; fat, generated by the digestion of the blood by the internal fires ; bone and cartilage ; marrow, including the brain ; and semen. The " excretories " composed a third section ; ranked as impurities, they included " oily exudations, seminal fluids, blood, dandruff, urine, faeces, ear-wax, nail parings, phlegm from the throat, etc., tears, concretions in the eye, and sweat."

Diagnosis.—For ascertaining the nature of disease physicians examined first the appearance, the countenance, and tongue ; then, by touch, feeling the pulse and temperature ; and thirdly by questions into the medical and general history. The senses of taste and smell also were used. The weakness or loudness of speech was noted. The pulse was felt with three fingers ; in the male the right radial pulse was felt, in the female the left. Attention was paid to compressibility, frequency, regularity, size, and the different impressions it produced on the fingers.

Hygiene and Public Health.—Health precepts have been in force for 3,000 years, backed by religion. These laws prescribe strictly the mode of life ; the hour and method of rising ; attention to the calls of nature ; cleaning of the teeth, tongue, and nose ; bathing ; shampooing ; massage ; inunctions ; resting ; exercise ; diet ; clothing ; housing ; sleeping ; and climatic changes.

Midwifery.—Rules for the conduct of labour were strictly laid down, covering the size and ventilation of the room, the cleanliness of the hands of the attendants, lubrication of the vagina and perineum with sweet oil, and encouragement of the patient. The humoral theory comes into the physiology of parturition. " By the wind of the pelvis the foetus is expelled, as an arrow is shot from a bow, and falls insensible to the ground. All its former knowledge is immediately forgotten, and, losing so many pleasing illusions, it cries." Five classes of barren women were enumerated: (1) the crow-barren, who only bear once in a lifetime ; (2) those incapable of conceiving ; (3) those who conceive but always miscarry ; (4) those whose offspring do not survive their birth ; and (5) those sterile on account of physical weakness. All except the first class were considered capable of being cured by appropriate medical treatment. If labour was delayed, sneezing and straining were induced by the application of the smoke of the burnt skin of a black serpent, or the tickling of the throat with a finger covered with hair. These measures were also used for the retained secundines. Internal turning was practised. If this was not successful, dismemberment of the foetus was performed, the various parts being extracted with a hook. The indications for Caesarean section were laid down ; this operation was first performed by Sushruta.

Medicine.—Classification of diseases was very confused, due to the adherence to the humoral theory. Many were recognized, however, and suitably dealt with: for instance, chest diseases such as asthma (treated with datura), bronchitis, pneumonia, phthisis (treated with garlic), heart disease and angina (treated with cardamoms), diabetes mellitus, jaundice, anaemia (treated with iron preparations), cholera, dysentery (treated with bael fruit), nervous diseases such as apoplexy, epilepsy, hemicrania, various paralyses, and tetanus, and skin diseases such as eczema and venereal affections. The system of giving poisonous drugs in increasing doses to a maximum, and then decreasing regularly to finish the course, was well known. The use of the cautery, the production of emesis at regular intervals, and blood-letting by leeches, cupping, and venesection were very carefully described and performed.

Surgery.—This was held to be the chief of the medical sciences, and practical instruction was very carefully given. After the student had been taught from books, different operations were demonstrated to him upon wax spread on a board, gourds, cucumbers, and other soft fruits ; tapping and puncturing on a leather bag full of water or soft mud ; scarifications and blood-letting on fresh hides of animals from which the hair had been removed, and upon the vessels of dead bodies ; puncturing and lancing on the hollow stalks of water-lilies ; and teeth extraction on dead animals. The ancient Hindus used steel surgical instruments, and had a great variety. Foreign bodies were removed from the throat by probangs, as well as in other ways. Amputations were carried out boldly, boiling oil, pitch, and pressure bandages being used to check haemorrhage. Perineal lithotomy was frequently performed as vesical calculus was very common. Abdominal obstruction was dealt with by laparotomy. Hernias were treated by irritant plasters or the actual cautery over the neck of the canal so as to produce adhesive inflammation. Fractures and dislocations were carefully set and trephining successfully accomplished. New noses and ears were fashioned with wonderful skill,

and lens couching in cataract was common. Anaesthetic drugs such as soma juice and sammohini were administered.

The Period of Decadence

Such being the attainments and knowledge of the ancient Hindu-Aryan surgeons and physicians, what were the causes of decline? Three factors seem to have been operative. First, the heat and conditions of the country in some small measure contributed to the reduction of that energy so necessary for the continued investigation and practice of medical work. Next, with the Mohammedan conquests, bigoted prejudices in favour of the Yunani system brought about the ignoring of science and the replacement of observation and reasoning by theorizing. The third, and probably the greatest, factor in the decline was religious. No criticism was allowed of any of the facts and deductions in the reputedly inspired volumes. Thus no advance was made, no correction of mistakes was possible, and stagnation ensued. A religious interdict was issued against every occupation involving contact with a corpse ; the study of anatomy and pathology stopped. Investigation for the sake of man's health was banned if it involved animals or men. Asoka in 220 B.C. had established a public health service and hospital accommodation, his edicts being carved on rocks, but the complete arrest of experimental work brought to an end the wonderful ancient standards of Hindu-Aryan medicine.

France

[From our Correspondent in Paris]

Future of the Pasteur Institute

Pasteur was much more than a Frenchman, and the Institute to which he gave his name has always faithfully reflected his cosmopolitan outlook. Many of the greatest names associated with this Institute are those of foreigners, and long may the whole world of medicine continue to feel at home in it. The Institute began very modestly in 1886 as a centre for the treatment of rabies. The meagre funds and modest quarters attracted big men: Duclaux in charge of general bacteriology, and Roux teaching technical bacteriology ; Chamberland in charge of anthrax vaccination, and Grancher of antirabic vaccination. Presently Metchnikoff threw in his lot with this small group, and each in his turn attracted new disciples. In Roux' service were Nicolle, Yersin, Borrel, and Calmette. Collaborating with Metchnikoff were Bordet and Salimbeni, and so on. There were giants in those days. After Pasteur's death in 1895 the momentum given by his personality continued. Funds and housing accommodation grew. A large building devoted to biological chemistry sprang up over the way, on the other side of the Rue Dutot ; close to it there arose a hospital for the treatment and study of infectious diseases ; and only three years ago a new block of buildings was inaugurated, an outward and visible sign of Calmette's B.C.G. activities. In less than half a century the Pasteur Institute had grown from nothing into a vast centre of research. Its organization and direction were unchallenged ; Pasteur's mantle had fallen on Roux, and when he should be gathered to his fathers the succession seemed secure with such a man as Calmette, already helping Roux to hold the reins. And then Calmette died five days before Roux. The situation was critical. The Executive Committee of twelve members, one of whom was the late Raymond Poincaré, appointed a Commission, composed of certain members of the Executive Committee, to study the administration and scientific organization of the Institute and the means to assure the continuity of Pasteur's enterprise. After deliberating for six months the Commission reported. Its conclusions were adopted by the Executive Committee, and the Institute is henceforth to be under a director and an assistant director, and to enjoy the services of a Scientific Council with exclusively advisory functions. This Scientific Council is under the authority of the Executive Committee, and its members are: Bertrand, Bordet, Borrel, Mesnil, Charles Nicolle, and Yersin, all disciples of Pasteur. Louis Martin is director, and Ramon, of anatoxin fame, is assistant director.

Dr. Paul Durand

French doctors have discovered a Sir James Mackenzie in their midst. During the past few years collective research by general practitioners has been conducted under the auspices of the Assemblée Française de Médecine Générale, an association which encourages the pooling of clinical observations by the general practitioner and their discussion from time to time in Paris under the chairmanship of some acknowledged leader among the consultants. Since 1932, and at every one of a dozen successive meetings, a general practitioner has presented a series of clinical and epidemiological studies conducted during a lifetime in the country. His name is Paul Durand, and his colleagues' esteem has found expression in the invitation extended to him to preside at the meeting on November 4th, when the subject under discussion was " Diphtheria: Its Serum and Vaccine Treatment."

A Surgical Congress

Three principal subjects were discussed at the forty-third French Surgical Congress, which was held between October 8th and 13th: the fourth venereal disease, suppurative arthritis of the knee, and the surgery of the suprarenals. The discussion on the treatment of the suppurating knee-joint must have given most listeners the impression that surgery is a house divided against itself, and that we have still a long way to go before we find a treatment which most surgeons will accept as rational. Much more unanimity, of a pleasingly complacent character, was shown in the discussion on lymphogranulomatosis, Nicolas-Favre's disease, or the fourth venereal disease. Among those who took part in this discussion was Professor Frei of Berlin, whose name is associated with the reaction on which the diagnosis of lymphogranulomatosis depends.

"Covering"

To what extent may a French doctor employ a nurse without laying himself open to the accusation of " covering "? This question has been raised so often of late that a member of the editorial staff of *Concours Médical*, Dr. Paul Boudin, has taken the trouble to delve and dive into legal records. He has emerged from this ordeal with alarmingly instructive observations. According to a judgement of the Tribunal Civil de la Seine in 1906, a hypodermic injection is minor surgery. It must therefore be undertaken by the doctor himself, or in his presence, or under his supervision and direct control. This operation, according to the aforesaid judgement, does not come within the scope of the nurse in the execution of a doctor's orders. Be it noted that the nurse of 1906, with the exception of the Sister of Mercy, was not always the embodiment of, or the last word in, surgical cleanliness, and the interpreters of the law may be excused, and even cautiously commended, for the limitations they imposed on her activities. But the standards of nursing have vastly improved during the past score of years, and the French nurse of to-day practises this minor surgery with equal skill and impunity. When an Anglo-Saxon practitioner recommends a tablespoonful three times a day after meals, his confrere over here prescribes " piqûres " ; and even if the law courts were to persist in defining them as minor surgery, the nurse is not likely to hold her hand as long as she is encouraged by the doctor under whom she works to prick his patients.

England and Wales

Conference on Health Education

The seventh Annual Conference on Health Education organized by the Central Council for Health Education, will be held on Thursday, November 22nd, in the lecture theatre of the London School of Hygiene and Tropical Medicine. Sir George Newman, as president of the conference, will deliver an inaugural address at 11 a.m. A discussion on "The Education of the Public with Regard to Nutrition" will be opened by Professor J. A. Nixon of Bristol University, and Dr. W. G. Savage, county medical officer of health, Somerset. Dr. James Fenton, chairman of the Central Council, will speak at the beginning of the afternoon session at 2.30 p.m., after which the discussion on nutrition will be concluded. A second discussion, on "The Education of the Public with Regard to the Consumption of Milk," will be opened at about 4.15 p.m. by Dr. Thomas Orr, medical officer of health, Ealing, and chairman of the Publicity Committee, National Milk Publicity Council. At the close two new films, one on "Infant Management," will be shown. The Minister of Health has sanctioned the payment of expenses of two delegates from each local authority, and it is hoped that a large number of delegates will be appointed. The names and addresses of such delegates should be forwarded not later than November 16th to the Central Council for Health Education, 1, Upper Montague Street, Russell Square, W.C.1, whence further information about the conference may be obtained.

St. George's Hospital

At a special court of the governors of St. George's Hospital, London, held on October 31st, with the treasurer, Lord Greville, in the chair, the following resolution was adopted: "That the House Committee be authorized to draw up a scheme for the rebuilding of the hospital either on the present site or elsewhere with an appeal for funds for this purpose." A special committee will be appointed immediately to give effect to the terms of the resolution. H.R.H. the Duke of Kent, president of the hospital, recently agreed to a suggestion that intended wedding presents from the public should take the form of donations to the fund for the rebuilding of St. George's.

Midland Mental Pathological Society

A society has been formed, with headquarters in Birmingham, to promote co-operation among those interested in the study of the pathological basis of mental disorder and defect. Its origin dates back to November 27th, 1933, when thirty-four medically qualified superintendents and assistants from the various mental hospitals of the Midlands met at Hollymoor Mental Hospital, and an address was given by Dr. F. A. Pickworth, director of the City and University of Birmingham Joint Board of Research for Mental Disease. On that occasion Dr. H. Frieze Stephens emphasized the need of a society to hold meetings at which pathological problems, such as had arisen out of the demonstration of research work that day, could be discussed also with pathologists from general hospitals. The Midland Mental Pathological Society held its inaugural meeting on October 31st, 1934, those present numbering forty-two, and several others had signified their intention of joining. An address by the president, Sir Gilbert Barling, Bt., F.R.C.S., chairman of the Joint Board, was warmly received, and a formal resolution to found the society was proposed and discussed by Drs. B. H. Shaw, H. F. Fenton, A. M. McCutcheon, Frieze Stephens, and W. A. Potts. Dr. Pickworth was appointed honorary secretary and treasurer, and Dr. Shaw chairman of the committee for 1934–5. After the approval of rules and regulations, and votes of thanks to the University of Birmingham and to the dean of the Medical Faculty, Dr. R. D. Lockhart gave a lantern demonstration of "Naked-eye Blunt Dissection of the Brain," showing with remarkable clearness the various important nerve tracts of the mid-brain and brain stem, including his own discovery of the commissure connecting the optic lobes of the cerebrum. He showed also sections of the whole brain made with Hamilton's microtome, and demonstrated the instrument. The society fulfils a much-needed association between those engaged in the study of mental disease and general medicine, and promises enthusiastic and lively discussions at future meetings. Membership (apart from honorary members) is restricted to those connected with medical or mental institutions in the Midlands, to whom Dr. Pickworth (Hollymoor, Northfield, Birmingham) will be pleased to send information.

The City of London

Public health conditions in the 661 acres which constitute the City of London (excluding the Temple) are in some measure exceptional. The resident population is still declining, while the number of those who visit it and leave it daily is rising. The estimated population for 1933 is given in the annual report, for that year, of Dr. W. M. Willoughby, medical officer of health, as 9,830; the death rate is only 10.9 per 1,000, as compared with 12.2 for 118 great towns of England and Wales, and 12.2 for the metropolis as a whole. The City therefore can be regarded as one of the healthiest residential parts of London, and shows relatively low figures for the incidence and mortality rates of zymotic diseases and phthisis. Considerable use is made of the facilities provided by St. Bartholomew's Hospital. The City Maternity and Child Welfare Centre is accommodated there, and was reorganized at the beginning of last year, innovations then introduced including the appointment of a medical officer to attend the sessions, and of a trained health worker to visit the infants in their homes and to carry out the non-medical duties at the weekly sessions. Of the 219 infants under the age of 2 years in the City, 164 attended the centre during 1933, the total attendances numbering 1,800. This represents a high percentage of the infant population, and is attributed to the home visiting. One of the most satisfactory features of the centre is its close association with the children's department of the hospital. Although the centre is conducted as an entirely separate enterprise for the management of healthy infants, it is possible for the mothers to get advice at the hospital if their children should become ill between the sessions, and the transference of a sick child to the children's department is a very simple matter. As regards maternal mortality, only sixteen maternal deaths occurred among City residents from 1900 to 1933 inclusive. Co-operation between the Blind Persons Act Committee and the Infant Welfare Act Committee has now been established in the City. Since the close liaison with St. Bartholomew's Hospital also covers the treatment of venereal diseases, effective work can be done, and the services of an ophthalmologist have been obtained through the hospital. The Metropolitan Society for the Blind, which is the agent for the City Corporation, reports that the City blind number only fifteen, all of whom are over the age of 30. During past years certain difficulties have arisen with regard to persons diagnosed as tuberculous and resident at the places where they were employed. There is normally a period of two to three weeks before these patients can be admitted to an institution controlled by the London County Council,

and in such cases more prompt removal is essential. Arrangements have been made, therefore, with the Brompton Hospital for Consumption, whereby these patients can be removed to that institution as in-patients within forty-eight hours, under a certificate supplied by the medical officer of health. No special points have been noted as regards the incidence of tuberculosis, and the records do not show that the pulmonary form is specially prevalent among any class of workers in the City.

Housing in Cardiff

Cardiff has relatively few houses which are old, worn out, or for other reasons unfitted for human habitation. But it has its own "slum problem," inasmuch as overcrowding continues from year to year in consequence of the evil practice of multiple tenancy, and this in spite of the fact that 9,215 houses have been built since the war by the City Council and by private enterprise. As elsewhere, difficulty has been experienced in providing houses in sufficient numbers and suitably placed from the point of view of access to the main centres of employment. Prospective tenants are unwilling to move far away from the centre of the city for fear of incurring added expense in travelling to and from their work. This overcrowding is reflected in the annual report of the medical officer of health, where it is shown that only 122 out of 279 new cases of pulmonary tuberculosis had sleeping rooms to themselves, and that the number of contacts exposed to infection in the same bedrooms as tuberculous patients was 243. A further survey of the city was carried out during 1933 for the purpose of ascertaining the number of houses that were unfit for human habitation and incapable of being rendered fit at a reasonable cost. A total of 207 houses in such a condition were scheduled for demolition. The policy of the city council has been to group as many as possible of these houses into areas, so that they could be dealt with in accordance with the provisions of Part I of the Housing Act of 1930. Representations have been made regarding seventeen clearance areas, including a total of 151 houses and seven other buildings. The houses in these areas contain 165 families with a total of 634 persons. Outside the scheduled areas there are fifty-six houses which are unfit for human habitation, containing fifty-nine families consisting of 192 persons. It will be seen, therefore, that the total numbers of families and persons to be displaced are 224 and 826 respectively. The control exercised by the public health department on the corporation housing estates has led to a progressive reduction in the proportion of vacant houses found to be verminous, the percentage having fallen from 30.5 in 1930 to 20.5 in 1933. Dr. Greenwood Wilson became medical officer of health on December 1st, 1933, in place of Professor R. M. F. Picken, who resigned at the end of September to occupy the Mansel Talbot chair of preventive medicine, having then completed twelve years of service as Cardiff's third medical officer of health since 1854.

Tuberculosis in Lancashire

An index has been provided in the comprehensive report for the year 1933 of the central tuberculosis officer of the Lancashire County Council; it reveals the extent of the work most vividly. For instance, under "Treatment" are listed references to artificial light, artificial pneumothorax, crisalbine, home, hydnocarpates, inhalation therapy, institutional (pulmonary and non-pulmonary), phrenicectomy, sanocrysin, and thoracoplasty, while there are seven different references under the heading "Deaths from Tuberculosis." Another feature is the arrangement of much of the report in the form of short articles on the various subjects. Dr. Lissant Cox reprints his article on the place and uses of the tuberculosis dispensary, which was the opening paper in the discussion on this subject at the annual conference of the National Society for the Prevention of Tuberculosis in London last June. This is followed by a chapter on the question whether recovered tuberculous cases relapse, in which it is shown that 96.6 per cent. of the patients written off as cured did not return to the dispensary, while the percentage not returning of those who at some time had had a positive sputum was 96.8. Dr. Lissant Cox then deals with the question whether children rejected as non-tuberculous develop tuberculosis in adolescence, and concludes that the conservative standard of diagnosis of pulmonary tuberculosis in children adopted in Lancashire appears to be justified by the results, while the consequent saving in sanatorium beds is a public benefit. Of 3,556 young adults who came on the dispensary registers as definite cases of tuberculosis in the period 1927–33, and who could therefore have been seen as children in or after 1913, only thirty had been rejected in childhood as not suffering from the pulmonary form of the disease. Even in these thirty some allowance must be made for the contraction of infection from existing cases in adolescence. Moreover, an examination of the 686 deaths from tuberculosis in the seven years 1927–33 of persons not notified as tuberculous during life does not reveal the name of a single person who had been rejected at the dispensaries as non-tuberculous in childhood. A chapter on actinotherapy at the Eccles dispensary contains the information that 82 per cent. of the 152 patients who were discharged from the light clinic during the period 1927–30 as quiescent and apparently well, and no less than 96 per cent. of the adenitis cases, were still quiescent after three to six years. A survey of sixty-four cases of artificial pneumothorax matched with controls in a pulmonary hospital indicates the superiority of this form of treatment, especially when the extent of lung involvement is small. The youth or otherwise of the patients is less important, and even when the treatment was unsuccessful the survival rate was unimpaired. The tabulated after-histories of the adult pulmonary patients who came on the dispensary registers during the years 1920, 1925, and 1930 indicate but little improvement in 1925 over 1920—five years in which very little collapse therapy was attempted—while there is a slight but definite gain in 1930. Another table of the after-histories of patients suffering from non-pulmonary tuberculosis reveals slightly better results in 1930 as compared with the previous year. Between 70 and 74 per cent. of adults and 81 and 86 per cent. of the children recovered from their disease, or reached a stage where it was arrested or quiescent. In addition to carefully argued statements of this kind there is the usual mass of details, both clinical and administrative, which render this report even more instructive than its predecessors.

Scotland

Treatment of Mental Disease

In an address to the Edinburgh Women Citizens' Association, on "Mental Hospitals and Institutions," Dr. Hamilton Marr, Commissioner to the General Board of Control for Scotland, said that the limited teaching on the subject of mental disease in the medical schools acted unfairly towards the general practitioner, on whom the community was dependent for the thoroughness of its medical care. At the present time a knowledge of mental problems was restricted to the medical men who came into actual contact with the insane in asylums or mental hospitals. The number of teachers of psychiatry in this country could be counted on the fingers, but the day was approaching when a special diploma would be necessary

for the practice of psychiatry, just as it now was for the practice of public health. It was now recognized that mental disorder should not be neglected until the affected person became certifiable, but treated in early stages and under hospital conditions. There should be certification only in the case of those patients who were dangerous to themselves or to others, and who refused to avail themselves of care and treatment and required to be detained under legal warrant. He suggested that Scotland should be divided into four districts, each grouped round a university centre and provided with a central psychiatric hospital and outdoor department. Such hospitals would be conducted on the same lines as the large general hospitals, and attached to each there should be throughout the district subsidiary clinics and outdoor departments. The central hospitals, managed by special district committees, would be available for every person who required advice and help. They would be equipped with all known aids to diagnosis, care, and treatment, and for research into the many unsolved problems of the cause and treatment of mental disorder. This scheme, if attained, would make for efficiency and economy, and there would be no necessity to add to the present mental hospitals or to erect new asylums. Dr. Marr believed that an appeal to the public for contributions to such psychiatric hospitals would, even in these times of financial stringency, receive an unexpected response, and the scheme could be inaugurated if local authorities were required to give the equivalent of the old lunacy grant, which was at present included in the Government block grants. It would undoubtedly lead to a reduction in the incidence of mental disorder throughout Scotland, and the accumulation of chronic mental cases would be notably diminished.

Ireland

Vital Statistics for Northern Ireland

The annual report of the Registrar-General for Northern Ireland for the year 1933 has now been published,[1] and in addition to the usual information concerning marriages, births, and deaths it contains a résumé of the administration of the Registration Acts. It appears that the state of registration in Northern Ireland leaves much to be desired ; during the present century alone some thousands of births and deaths have escaped notification. The appropriate Acts have been in force for seventy years, and it seems very remarkable that there should still be such a measure of non-compliance with their provisions. There were 24,601 births registered during the year, representing a birth rate of 19.4 per 1,000 of the estimated population. This rate is the lowest recorded for Northern Ireland, but, notwithstanding the continued fall, it is the highest recorded in the British Isles for the year. The number of deaths registered was 18,154, giving a rate of 14.3 per 1,000. This shows a slight increase when compared with the rate for 1932, the increase being largely due to the epidemic of influenza which occurred in the early part of the year. The death rate of 1.15 per 1,000 from all forms of tuberculosis represents the first check since 1925 to the downward movement in the tuberculosis death rate, which had been falling since 1922. The increase, possibly arising out of the influenza epidemic, was peculiar to Northern Ireland, the rates in the other parts of the British Isles continuing to decline. The proportion of deaths from tuberculosis during the year at ages under 35 shows a reduction as compared with the figures of recent years, the proportion occurring at ages of 35 and over showing a corresponding increase. The death rate from cancer, which was lower in 1932 than in 1931, was still lower in 1933. There was an improvement in the infant mortality rate, notwithstanding the warm, dry summer, when diarrhoeal diseases among children may be expected to be prevalent. The rate of 80 per 1,000 births registered, however, compares unfavourably with the infant mortality rates for England and Wales and the Irish Free State, which were 64 and 65 respectively. The maternal mortality rate for the year was 6.63 per 1,000 births, this being the highest figure recorded in the history of Northern Ireland.

[1] H.M. Stationery Office, 80, Chichester Street, Belfast. (2s. 6d.)

Health of County Dublin

Dr. J. Harbison, in his monthly report to the County Dublin Board of Health, stated that the twenty-two cases of enteric fever in Swords Dispensary District occurred in Portrane Mental Hospital, where the outbreak was confined to one wing, in which a typhoid carrier was discovered. No case had been reported since October 2nd, and, presumably, the outbreak had subsided. Seven of the eight cases of diphtheria in Castleknock area occurred in an institution, where a diphtheria carrier was discovered ; on removal of the carrier the outbreak subsided. The school medical inspection showed a marked increase in the number of children suffering from diseased tonsils and adenoids. Despite the full operation of the school meals scheme, the malnutrition figure was comparatively high.

Reports of Societies

PERSONAL FACTORS INFLUENCING ANAESTHESIA

In the Section of Anaesthetics of the Royal Society of Medicine on November 2nd Dr. H. P. CRAMPTON delivered his address from the chair, taking as his subject, "Factors, other than Anaesthetics, influencing Anaesthesia."

Dr. Crampton began by remarking that the modern anaesthetist had more drugs at his command than ever before, yet there remained certain factors influencing anaesthesia, apart from the drugs, the route, or the apparatus employed. He discussed them in three groups: the patient, the anaesthetist, and the surgeon and his operation. In the patient the mentality was more important than the physique. Large physique as such was not a drawback ; some of his most satisfactory patients were guardsmen of large physique, but also of magnificent discipline, while the slender patient, if he or she had poor moral control, might be difficult. The way in which mentality affected anaesthesia was shown by "frightened" respiratory, cardiac, and spasmodic effects persisting after unconsciousness. Few people were in a state of real panic at the zero hour, but if real panic did persist it added a definite risk to any mode of induction. Most patients were mildly apprehensive. Those who boldly admitted their fears were, as a rule, quicker in reaching a smooth anaesthesia than those who suppressed it. Among the worst types were the man who had been long accustomed to a position of authority, the pampered woman, and the spoilt child. Among alcoholics, who required large doses and recovered consciousness very quickly, he distinguished two types: the cheery soul who drank to excess in company came up smiling for his anaesthesia, and though he might be noisy during induction, once "under" he slept like a babe ; on the other hand, the alcoholic who drank because he lacked moral courage to resist exhibited the usual nervous signs extending far into anaesthesia. Tobacco fiends often had an irritable cough reflex, necessitating an unusual depth of anaesthesia. Drug addicts, he believed, were very refractory. Anaemia, fever, exhaustion, and shock promoted an easy anaesthesia, but the margin of safety was

smaller. Fat had been described as the surgeon's worst enemy, and it could hardly be called a friend of the anaesthetist. Pathological conditions liable to cause sudden death were always possible factors prejudicing anaesthesia.

The anaesthetist himself could bring to bear on anaesthesia stage management, judgement, and personality. As for the first of these, rest before anaesthesia was frequently not long enough, but the patient should also be given some mild mental occupation, such as an easy crossword puzzle. A man should not be "knocked off" his usual tobacco and alcohol the night before anaesthesia; this would only make him miserable and irritable. Stomach tubes, enemas, purgatives, and starvation might sometimes be necessary, but were very likely to exhaust and distress the patient. Silence or taciturnity was not a virtue in the anaesthetist. It did not matter much what he said to the patient, but he should say something, partly to create an idea and partly because most people derived comfort from a friendly voice on such occasions. Hearing returned early, and an assurance that all was well, spoken directly into the patient's ear, penetrated his understanding even though he was still apparently unconscious; if this was so, it was likely to help the onset of natural sleep. For comfort the patient should be allowed to have as many pillows as he liked, and to assume any position within reason; he could be placed in the required position when unconscious. It was preferable to let the patient hold the nurse's hand rather than the reverse, as the holding of the patient's hand by another was liable to be interpreted as a feeling of restraint. Judgement in the choice of dosage of anaesthetics would obviously affect anaesthesia, but that was outside his scope in this address. The anaesthetist's personality, a vague but important factor, might affect the patient profoundly. The "anaesthetic personality" might take a long time to develop. The secret was probably the gift of seeing things from the patient's point of view. The patient should not be approached with set phrases; rather should the art of making an appropriate remark at the proper moment be cultivated. If the anaesthetist did succeed in impressing his personality, a nurse by her encouraging or deprecatory allusions might do much to augment or wipe out entirely his good efforts.

The surgeon exerted a powerful influence on the anaesthesia. On occasion surgeons had been known to hurry induction, or even bluff the anaesthetist into allowing the operation to start before the patient was ready, a procedure which it might be difficult for a junior anaesthetist to oppose. Fortunately, however, most surgeons realized the importance of waiting for the anaesthetic balance. As for the operation itself, pulling, tearing, and stretching affected anaesthesia more than cutting with a sharp knife. They all knew that upper abdominal reflexes were more powerful than pelvic; that a total gastrectomy would disturb more than removal of a lipoma; that operations involving much haemorrhage would call for a marked reduction in dosage, an easy matter with inhalation methods, but not so simple with intravenous or rectal therapy. Menstruation was of importance in this connexion. In most cases it was a question of whether the patient minded putting up with more trouble at that time, but in major breast operations it might be a very real added risk to anaesthesia. It was easy enough to pick up cut vessels, but quite another thing to control oozing, and the latter might be severe at such periods. The position of the patient might introduce undesirable complications, varying from difficulty in maintaining a patent airway to a fatality, as in faulty position for spinal anaesthesia. On the other hand, position might facilitate anaesthesia by making operative measures easier. In empyema and such operations an intelligent and willing dresser was preferable to any mechanical arm rest, offering as he did much greater relief to the unaffected side of the chest from the considerable weight of the upper arm. The Trendelenburg position mostly made for safety and ease of anaesthesia, but might cause considerable respiratory embarrassment in obese subjects under full narcosis. The rolling of the patient from side to side after deep anaesthesia or severe operation, to apply a many-tail bandage or remove the ambulance canvas from the bed, might cause profound depression. It was easy to lift the patient, like a horizontal poker, dry him, put on the binder, and remove the canvas, but it took three people to do it. The time factor in anaesthesia was also important. It was mostly held that about 9 a.m. was better for the patient than the small hours of the morning. The optimum time for anaesthesia in cases of severe trauma required insight and judgement if the best results were to be obtained. The length of time spent on any operation and its effect on anaesthesia was a very variable factor. In the case of a healthy patient subjected to, say, a varicose vein operation, it mattered little whether anaesthesia lasted for half an hour or, as in one case, three and three-quarter hours. But time in many cases might be very important. With wartime multiple gun-shot wounds the consensus of opinion favoured two, three, or even four surgeons working on the same patient at the same time. Another very difficult time problem was presented when the patient steadily got worse under anaesthesia. A pause for recovery during operations involving very severe hurt might be the means of making a successful termination possible. Here Dr. Crampton gave an analogy from the boxing ring, where the pugilist, severely punished in one round, might, after the brief pause, come up with astonishing vigour in the next round. Finally, Dr. Crampton mentioned the value of punctuality. Delay might have a very adverse effect on anaesthesia. A patient, keyed up to the ordeal, might be expecting the operation at 2 o'clock, and some form of premedication, perhaps, had already been administered, when the nurse broke the news that the surgeon had been delayed and could not operate until 5 o'clock. The food for the patient had been timed in view of the earlier hour, and it was now too late to give more. The premedication effect would wear off, and the victim would have to screw up courage all over again. Such eventualities militated against that ease of body and mind which made for a smooth anaesthesia.

SILICOSIS

At a pathological meeting of the Liverpool Medical Institution held on October 25th, with the president, Dr. J. MURRAY BLIGH, in the chair, Dr. W. E. COOKE read a paper on modern views on silicosis.

Dr. Cooke dealt with the necessity of reconsidering the terminology in the many conditions at present included under the title of "silicosis." The causative factors were considered in the light of the recent work of W. R. Jones and W. Tideswell. The effect of size of the grain on the solubility of SiO_2, the size of lung alveoli, the presence of large particles of insoluble minerals such as asbestos fibres and fusain spicules in asbestosis and coal-miners' lung, and the production of the curious bodies in these diseases and in normal lungs were considered. Photomicrographs of potash felspar undergoing metamorphosis into secondary white mica and sericite and coal-measure shale and mine dust demonstrating the presence of sericite and quartz grains were shown. Badham and Taylor's views on sillimanite in the production of silicosis in New South Wales, and their chemical analyses of the lungs of various workers, were considered and compared with the lung analyses of other observers. Examination of the lung sections by polarized light and the results of the repetition of Watkins-Pitchford and Moir's work in this connexion were given. The conclusions arrived at were that the balance of probability, on the insufficient data of to-day, pointed to the various forms of pneumoconiosis being due to chemical rather than mechanical action, and until the silicates (sericite, sillimanite, and asbestos) and the various forms of silica (quartz, chert, flint, etc.) were isolated in a pure state and investigated in regard to their solubilities in plasma and the tissue reactions to their presence, no progress in the aetiology of the disease was possible.

In the discussion which followed, Professor J. HENRY DIBLE said that he appreciated the scientific quality of Dr. Cooke's communication and the importance of his mineralogical observations. He himself had been im-

pressed by the case made out by W. R. Jones for sericite in the examples of silicosis with which the latter had worked. It was difficult to clear the mind of a doctrine which hitherto had been acceptable and to approach the problem entirely on its merits: Jones's work was therefore subjected to a good deal of prejudice. If the sericite theory were weighed against the silica theory it had to be admitted that sericite was present in the lungs in question, and in large amounts. The speaker was not competent to question the identification of the mineral, and had to accept the statement of the mineralogist on this point. It was stated that sericite was less stable than quartz, and it seemed perfectly reasonable to accept the view that it could cause the fibrosis. At the same time it was apparent that in other situations silicosis (without quibbling over nomenclature) arose without the presence of sericite ; an example was to be seen in the recently published cases of siderosilicosis of Professor M. J. Stewart, in which sericite could not be demonstrated. The theory put forward by Jones was well sustained by his observations on the distribution of silicosis in relation to distribution of sericite ; this part of his work was unquestionably impressive, although the speaker would emphasize the pitfalls encountered in accepting loose clinical statements as to the presence or absence of silicosis in any given industry or mine which were not substantiated by pathological findings. Experience in the South Wales coalfield had emphasized this.

Dr. C. O. STALLYBRASS referred to the radical alteration in views with regard to silicosis which have taken place in the past ten years, largely as the result of Dr. Cooke's work on asbestosis. Dr. Cooke was not only a skilled pathologist but also had exceptional knowledge of microscopy and mineralogy, which enabled him to deal with this borderline of science.

ACUTE CHOLECYSTITIS

At a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, on October 26th, Mr. SETON PRINGLE took as the subject of his presidential address " Acute Cholecystitis."

Mr. Pringle called attention to the fact that the clinical picture of acute cholecystitis was generally unmistakable, and discussed the differential diagnosis from acute perforation of the duodenum with extensive extravasation, acute perforation of the duodenum with slight extravasation, acute pancreatitis, and acute inflammation of a high-lying appendix. In discussing the pathology he called particular attention to the facts that the cystic duct was commonly obstructed by a stone, that the wall of the gall-bladder was usually greatly thickened and fibrosed, and that, although perforation of the gall-bladder occurred in some 15 per cent. of cases, in only about 1 per cent. did free peritonitis result, as in all other cases sufficient time had elapsed for the gall-bladder to become so surrounded by adhesions that a pericholecystic abscess only resulted. Mr. Pringle laid particular stress on the rarity of free peritonitis occurring in gall-bladder cases as compared with acute appendicitis. He dealt at some length with the question as to the best time for operation, and pointed out that the literature showed an increasing number of surgeons who advocated immediate or early operation. In conclusion, he stated his own views, which were that immediate operation was only justified in very acute cases, showing marked toxaemia, very severe pain, persistent vomiting, and rigidity. He was satisfied that the great majority of cases would settle down and allow a safer and more complete operation to be carried out in eight to ten days. He did not approve of further postponement, because many perforations of the gall-bladder, with the development of pericholecystic abscesses, took place without definite clinical manifestations. As regards the actual operation, he considered cholecystectomy the operation of choice, and said that cholecystostomy should be reserved for those very toxic or jaundiced patients in whom only a minimum of interference was permissible, and where the gall-bladder was particularly inaccessible.

Mr. R. ATKINSON STONEY said that it was occasionally difficult to make a diagnosis between acute cholecystitis and acute appendicitis, and mentioned in this connexion a case where a very large gall-bladder attached to a prolapsed Riedel's lobe had caused a tender mass in the right iliac fossa. Sometimes there might be a combination of conditions present, as evidenced by a case which developed a pancreatic pseudocyst after drainage of an inflamed gall-bladder ; acute pancreatitis and acute cholecystitis sometimes occurred together. The question of the time when to operate was of great importance ; it was, he thought, safe in each particular case to wait and see what was going to happen, and during the waiting period it was usually possible to improve the patient's condition by giving saline.

Mr. T. J. D. LANE thought that the anaesthetic was of the utmost importance in cases of acute cholecystitis. He did not see any point in postponing operation for a few days, and thought that at the end of two or three days the patients were in a much worse condition than they were twenty-four hours after the attack. He also asked why Mr. Pringle removed the gall-bladder from the fundus downwards. Mr. H. STOKES thought he would not operate after a first attack of acute cholecystitis. He would like to know how much a gall-bladder could recover. An appendix could recover after an acute attack in a fortnight to what was macroscopically a normal state, and he thought that if a gall-stone were passed the gall-bladder would also return to normal. The diagnosis was sometimes extremely difficult, and he had recently found a perforated gall-bladder in a patient who had been treated medically for duodenal ulcer.

Dr. R. W. SHAW said that in many cases the use of an intratracheal tube made the operation much easier. He thought that high spinal anaesthesia in combination with nembutal orally was very satisfactory for any high abdominal operation. Mr. H. MEADE mentioned a case in which he had found the gall-bladder on the left side of the pelvis, and the seat of an early carcinoma. He felt that in acute cases operation should not be delayed. One sometimes came across patients with chronic heart disease, and in these cases it was better to give digitalis to the patient before operating. Mr. A. B. CLERY said that in acute cases if he had to operate he merely drained the gall-bladder, usually with a local anaesthetic, but he only operated on an acute case when it was absolutely necessary to do so. He thought that perforation was more likely to occur in elderly patients. The reason in most cases for operating early was because there was a doubt about the diagnosis.

Mr. PRINGLE, in reply, said it was very difficult to get the best anaesthetic. Usually the old gas, oxygen, and ether sequence satisfied him. He had no doubt that cholecystectomy and not cholecystostomy was the operation of choice. He always attacked the fundus first, and found this very satisfactory, but in a chronic case it was easier to remove the gall-bladder from below upwards. He did not interfere with, or look at, the common duct unless, before operation, there was something definitely pointing to the fact that it contained a stone. He thought it was very rare to get acute suppurative cholecystitis and a stone in the common duct. The whole crux of the question was the time at which to operate. He only operated as an emergency when there were general symptoms and considerable toxaemia.

The ninth congress of the Far Eastern Association of Tropical Medicine was held in Nanking from October 2nd to 8th, and was attended by a large number of representatives and delegates from the countries of the Pacific, from India, and from the United States. There were ten scientific sections, of which six were devoted to plague and cholera, malaria, leprosy, parasitology, bacteriology, and public health and quarantine, and two round-table discussions on plague and cholera respectively. Three interesting tours were promised in addition to numerous social functions. The acting president of the congress was Dr. J. Heng Liu, the other members of the Executive Committee being Drs. F. C. Yen and H. P. Chu (Shanghai) and Dr. P. Z. King (Nanking).

CORRESPONDENCE

Election to General Medical Council

Representation of Scotland

SIR,—We, the undersigned, having nominated our present representative, wish to appeal on his behalf to all members of the profession resident in Scotland. Sir Norman Walker holds at present the high position of president of the Council, an honour never before attained by a direct representative. Sir Norman, from his early experience in general practice, knows well its difficulties, even its hardships. Since leaving it for the specialty of dermatology he has been unremitting in the work he has done in medical administration, and during the war, as chairman of the Emergency Committee and as Commissioner for Medical Services for Scotland with the Ministry of National Service, did most important work for the community. After the war he was selected by the General Medical Council and sent to India to report upon the conditions of medical education; a piece of work for which he received the honour of knighthood in 1923; and when, five years later, it proved necessary to review the work then inaugurated Sir Norman again undertook the investigation. For thirteen years he was chairman of the Examination Committee, as also of the Business Committee, and the impress of his work was such that on the retiral of the late Sir Donald MacAlister he was elected to succeed him. It is not for us to say to the Council who should be their president, but we in Scotland should see to it that Sir Norman is there at their service.

We therefore, Sir, through your courtesy, would ask our fellow countrymen to support Sir Norman's candidature.—We are, etc.,

ANDREW ALLISON, M.B., CH.B., B.Sc., D.P.H., F.R.F.P.S.G.
W. HERBERT BROWN, M.D.
R. C. BUIST, M.D., LL.D.ED.
A. K. CHALMERS, M.D., LL.D.
D. ELLIOT DICKSON, M.D., F.R.C.S.ED.
C. E. DOUGLAS, M.D., LL.D.ED., F.R.C.S.ED.
D. LAING, M.D.ED.
JOHN S. MUIR, M.B., C.M., L.R.C.S., M.R.C.P.(HON.).
ASTLEY W. MACKINTOSH, K.C.V.O., M.D., F.R.C.P.ED., LL.D.
J. HUNTER P. PATON, M.D.
JAMES B. SIMPSON, M.D., F.R.C.P.ED.
MURRAY B. STEUART, M.B., C.M.
W. E. TERRET, M.D.ED.
ROBERT THIN, M.B., F.R.C.P.ED., LL.D.
GEORGE WILLIAMSON, M.B., C.M.Aberd., F.R.C.P.ED.

October, 1934.

*** As we go to press we learn that Sir Norman Walker has been returned unopposed as direct representative for Scotland on the General Medical Council.

Representation of England

SIR,—May I, through your columns, return thanks to my colleagues on the *Medical Register* for re-electing me to be one of their direct representatives for England and Wales upon the General Medical Council. I shall hope to be of service.—I am, etc.,

London, W.1, Nov. 2nd. N. BISHOP HARMAN.

Medical Benevolence

SIR,—Dr. A. J. Hawes's letter, in your issue of October 20th (p. 745), mentions what has always been the wish of my committee—namely, that a suitable representative of the Fund should be appointed in every district.

It is acknowledged that whatever success we may have achieved in recent years from a larger subscription list (in 1923, £4,758; in 1933, £11,856—an increase of approximately £7,000) has been due mostly to the energies of the honorary local secretaries, who have volunteered for the work. We have now 121 honorary local secretaries in England, Scotland, and Wales. Personally, I do not believe that there is any apathy in the profession as regards willingness to help our less fortunate brethren, but unless we can secure the help of volunteers, who will win over the obdurate and recalcitrant non-subscribers, we have no alternative but to issue printed appeals from the London office in order to make our work known.

On behalf of the committee, I issue this invitation through your columns to any of your readers who are willing to help us by taking an active part as honorary local secretary for the district in which they practise. The work required is not overwhelming. Such clerical work as the writing of letters in duplicate and the posting of appeals is undertaken by the clerical staff in London. The actual duty of the local secretary is to ensure, by a personal touch, that none of his colleagues in his district may be able to say that he is in ignorance of the existence of the Royal Medical Benevolent Fund, or that he has never been invited to subscribe to it. I hope that this formal invitation will lead to many helpers coming forward, so that we may have double the number of local secretaries at the end of this year to enable fresh efforts to be made in 1935.—I am, etc.,

D'ARCY POWER,
Chairman of Committee, Royal Medical Benevolent Fund.

London, W.1, Nov. 6th.

SIR,—I feel I must enter a gentle protest against the last paragraph of Dr. Harnett's letter (*Journal*, November 3rd, p. 837). After telling us of the fine way in which his Division has responded to his energetic efforts, he says that the Association is so busy with schemes for socializing the profession that it has little time to devote to the needs of medical charities, and goes on to say it should "urge a little more vigorously upon the Divisions the necessity of having an active charities secretary."

Within my own personal knowledge during the last ten years the Charities Committee has persistently impressed upon the Divisions the necessity of having a charities secretary. We tried all sorts of appeals, and undoubtedly the Association has made considerable progress since the time when it first took the medical charities up seriously. In various communications to the Divisions I made my own opinion perfectly clear (and I know my successor has done the same)—namely, that no Division can call itself properly organized and claim to be doing its duty to the profession and to the Association unless it has an active charities secretary. Wherever there has been such a secretary good results have followed.

As a member now of the Case Committee of the Royal Medical Benevolent Fund I spend a painfully interesting afternoon every month in going with my colleagues through the applications for assistance. We do our best, but we often feel that our best is only able to keep the recipient just above the starvation line. I wish every member of our profession could spend an afternoon with us; they would go away sadder persons, but determined to be subscribers and to enlist others. Like your correspondent from Scotland, I am convinced that the profession is quite able to provide for its own poor, and that in the Royal Medical Benevolent Fund it has excellent machinery for that purpose. From long experience I know that no words of mine are likely materially to alter the curious apathy of a large number of doctors. The situation is discreditable to us as a profession, and it has always been a mystery to me, because I know that the average doctor is a warm-hearted person, peculiarly

open to the appeal to his heart and to his pocket *when the individual case comes to his notice*. The difficulty is to arouse his imagination, and make him see that pathetic body of people, very like himself and his own wife and children, who have no other source of help than the charity of their professional brethren.

In the future I believe that the efforts which the B.M.A. is making to induce the general practitioner to insure himself against the contingencies of life will greatly lessen the claims on the benevolence of the profession, but in the meantime the need is there, and it is very great.—I am, etc.,

London, W.1, Nov. 2nd. ALFRED COX.

After-treatment of Empyema

SIR,—I imagine that most surgeons who take an interest in the after-treatment of the empyemata that they may operate upon must agree with Mr. Denis Browne in his contribution to the *Journal* of November 3rd. To state an empirical date for the removal of empyema tubes is quite as irrational as to assert that a tuberculous hip should be immobilized for six or twelve months or three years. I think that very many records and statistics relating to the treatment of empyemata are untrustworthy, because so often the healing of the sinus in the chest wall is taken as the criterion of cure.

A few weeks ago I saw a woman who had a "successful" operation" for an empyema twenty years before. The wound healed, and she was well for thirteen years, when she "felt her chest filling up again." The cavity was again drained and the sinus allowed to close, and since then the operation has been repeated twice at intervals. When I saw her there was no drainage; she simply complained that she could feel the fluid accumulating. At operation 1½ pints of thick pus were liberated. The walls of the cavity were found to be very tough and fibrous, obviously the original one which had never been obliterated. The discharge rapidly abated, and I am sure that if I were to remove the tube now the wound would heal again as on the previous occasions. There is also no doubt that the surgeons who performed the previous operations were satisfied that she was cured.

I am convinced that the only reliable indication that an empyema is healed is to be found in the *x*-ray examination after the injection of an opaque substance into the sinus, and not until this shows complete obliteration of the cavity deep to the ribs should drainage be removed. Filling up the cavity with Dakin's solution and measuring the amount contained is useful and inexpensive, always provided there is no broncho-pleural fistula, but this only gives an idea of the size and not of the shape and boundaries of the cavity. Sometimes it is very important to be aware of the way in which an empyema is closing in, as, for example, in the multilocular variety or in those large empyemata where the apex is involved and where there is a tendency for this region to become shut off from the site of drainage and to be left as a residual cavity. The value of repeated *x* rays with an opaque substance cannot be exaggerated.

To minimize expense I use the irrigation method in the early stages when the cavity is large, and then resort to *x* rays when the irrigation chart shows that the capacity is suitably diminished. For this purpose I have used 20 per cent. sodium bromide solution without any ill effects, but I have discontinued this because the shadow cast in the lateral view is not definite enough. I now use iodatol, and find it just as efficient as lipiodol and less expensive. I think globules are only formed if a small quantity is used in a large cavity. I shall welcome Mr. Denis Browne's cheap emulsion.—I am, etc.,

P. R. ALLISON, F.R.C.S.,
November 3rd. Surgical Tutor and Registrar, The General Infirmary at Leeds.

X-Ray Examination of Empyema Cavities

SIR,—One is indebted to Mr. Denis Browne for his article on this subject (*Journal*, November 3rd, p. 807), but I would like to emphasize certain points which I have found of special importance while working on the surgical side of the Brompton Hospital. One obtains here considerable experience of chronic empyemas—that is, empyemas which have not healed after the ordinary period of weeks or months, but have persisted for months or years. In the past year I have seen fifty-eight patients of this sort treated, and this excludes tuberculous pyopneumothoraces.

The most striking thing is that easily the largest number have been brought about because the original drainage tube was taken out at the wrong time—usually too soon. It is a patent fact that the teaching at universities to students of when to remove the tube in an acute empyema is sadly lacking. Here it has been known for many years that drainage should cease when the empyema cavity is obliterated. As in all septic cavities, this only occurs by the fibrosis and healing together of the cavity walls. A dogmatic time, or the nature of the discharge, are quite useless as criteria, and the fact that there is no cavity at the end of the short track can be the only indication. In the early stages, of course, where the cavity is still large, the amount of fluid it will hold is easily determined, and indicates its size, but later, when there is perhaps a small cavity with a long sinus, we have found *x* rays after the injection of lipiodol perfectly satisfactory to delineate the outline, and have used it as a routine for many years. Where a large quantity is necessary a barium emulsion can be used with perfect safety, and is, of course, cheap.

I would like to draw attention to three details of technique. (1) The opaque fluid should be run in with the sinus opening at the highest point. (2) After plugging the opening tightly a metal ring, as a marker, is placed over it. (3) Lateral as well as antero-posterior *x*-ray views are essential, and erect as well as recumbent views may be necessary if the cavity is large.

It can only be when the essential rules for removing tubes in empyemas are fully understood that numberless patients can avoid the long ill-health and frequent operations that become necessary when an empyema becomes chronic.—I am, etc.,

A. BRIAN TAYLOR.

Brompton Hospital, S.W.3, Nov. 5th.

Treatment of Haemoptysis

SIR,—The use of Congo red in the treatment of haemoptysis and other forms of haemorrhage, as described by Drs. Morlock and Scott Pinchin (*Journal*, October 27th, p. 762) is of very considerable interest and worthy of a more widespread application.

Congo red has been extensively employed by Bennhold, Bookman and Rosenthal, Strasser, and others in the diagnosis of amyloid disease.

Some years ago I made an investigation into this test (*Lancet*, February 20th, 1932, p. 391) which necessitated intravenous injections of the dye into forty-five patients, mostly children. A 1 per cent. solution was used and the dosage calculated on the basis of 0.25 c.cm. per kilo body weight—that is, from 6 to 12 c.cm. in children and 16 c.cm. for a 10 st. adult. No after-effects of any kind were noted and rigors were entirely absent. This, I think, was probably due to the observance of two points which are stressed by the Continental workers: (1) the use of Grubler's Congo red, which is free from such commercial impurities as lead and arsenic; and (2) the fact that all solutions were used within twelve hours of being made. Strasser observed that solutions more than

twelve hours old tended to produce shivering attacks and pyrexia. There was a notable reduction in the clotting time of the blood after injection of the dye. In fact, this was sufficiently marked at times to create some difficulty in the technique of the amyloid test.

More recently I have injected from 12 to 16 c.cm. of Congo red into a smaller number of adult cases of amyloid disease, also without the slightest ill effect. The opportunity to use the dye in haemoptysis has occurred only once, but the response was entirely satisfactory.—I am, etc.,

Standish, Lancs, Oct. 30th. J. EDGAR WALLACE.

SIR,—My more limited experience confirms the statement of Drs. H. V. Morlock and A. J. Scott Pinchin in their interesting article on haemoptysis regarding the value in treatment of 10 c.cm. of a 1 per cent. solution of Congo red given intravenously. This treatment is, as they point out, comparatively unknown in Great Britain. Some two and a half years ago the well-known phthisiologist Professor L. Brauer, medical director of the Eppendorf Hospital, Hamburg, told me that of all the drugs tried in his wards in cases of haemoptysis 1 per cent. Congo red solution given intravenously had been found the most effective. I have employed for convenience a proprietary preparation, haemostaticum, made by Nordmarkwerke A. G., Hamburg. I have always injected haemostaticum very slowly, and have never seen any rigor or untoward reaction. Drs. Morlock and Scott Pinchin rightly point out the necessity of not employing a solution of Congo red stronger than 1 per cent.

I hope their article will result in a more widespread use of what appears to be a definitely helpful medical treatment of haemoptysis.—I am, etc.,

Montana, Switzerland, Oct. 29th. HILARY ROCHE.

SIR,—I am interested to note that Dr. H. V. Morlock and Dr. A. J. Scott Pinchin, in their article in the *Journal* of October 27th (p. 762), discuss the use of intravenous injections of Congo red in the treatment of haemoptysis. They state, however, that the injection of 10 c.cm. of a 1 per cent. solution of Congo red is often followed by a definite rigor. I have used as much as 10 to 18 c.cm. of a 1.5 per cent. solution of Congo red intravenously in over sixty cases for the estimation of blood volume, and have not observed rigors in any of these cases. The solution of Congo red used is made up with triple-distilled water and filtered through glass wool. I would suggest that the use of triple-distilled water in the preparation of the dye is an important factor in the prevention of rigors.—I am, etc.,

Liverpool, Oct. 31st. JULIUS LIBMAN, M.D.

Blindness After N.A.B.

SIR,—Mr. F. Juler's account of a case of blindness after N.A.B. (*Journal*, November 3rd, p. 809) will be of particular interest to all those who are daily using antisyphilitic drugs.

On admission his patient was found to have a positive Wassermann reaction and an aortic systolic murmur. In view of this and subsequent findings it seems reasonable to suppose that the syphilitic process was not confined to any one blood vessel, but that other arteries, including those of the optic nerves, were also involved. Optic atrophy following upon the injection of tryparsamide is quoted, but this rarely if ever results when the eye is healthy.

It is generally recognized that arsenobenzol preparations, even in small doses, are dangerous in cardiovascular syphilis, as further damage to the arterial walls may be brought about. Fortunately, the administration of full doses of N.A.B. in such cases must be almost as rare as the occurrence of blindness after their use.—I am, etc.,

November 3rd. JOHN A. BURGESS, V.D.Officer, City of Stoke-on-Trent.

Local Treatment of Coryza

SIR,—It is to be hoped that the *laissez-faire* attitude towards the common cold adopted by many individual sufferers, and advocated by Colonel W. C. Spackman in your issue of November 3rd (p. 835), will not become prevalent. Surely few will doubt that the results of a fatalistic inertia are seen in too many instances to be for the patient an unwelcome train of complications, and for his neighbours many contact infections. As well laud the virtue of a streaming cold in the head as a preventive of bronchitis as an active warfare on one frontier as a guarantee of peace on others!

Contrary to Colonel Spackman's view that "we are unable to cut it short by local means," further trial of the simple methods I advocated in the *Journal* in 1932 (March 5th, p. 449) has convinced me of their efficacy. A high percentage of colds can be stopped in an hour or two of the onset, or, in severer types, changed from a ten-day to a one- to three-day type, if the person affected, within an hour of the onset, will gargle with really hot water for a minute or two every fifteen to twenty minutes, and will immerse the hands and arms (and feet also, if chilled) till reddened in hot water. This alone will abort many colds. Adjuvants are hot drinks, a mild erythema dose of ultra-violet light, and "mistol," "orargol," or other antiseptic sprays, douches, or gargles.

A further valuable local remedy is the "anti-coryza spray," a local immunity vaccine (with antivirus) from the Pickett-Thomson Laboratory, and marketed by the Genatosan Company. I have seen a number of cases in which this has been of benefit, both as a preventive and as a curative agent. References to local immunity in the prevention and treatment of coryza and of suppurative rhinitis are given by Besredka in his *Antivirusthérapie* (1930, p. 80).

For those distressing colds which commence with fever and depression and pain in the trachea, felt just above the manubrium, a new remedy available is the ultra-short-wave diathermy. In one patient whom I saw lately with this onset a probable bed illness of ten days or so (from previous experiences) appeared to have been converted into a trifling interruption of the usual health. One ten-minute treatment with a six-metre wave-length relieved the pain immediately and the fever subsided; a good night followed a second evening application; next day there were no signs of "cold." On the following day a slight relapse with malaise and tracheal pain was promptly relieved after a similar treatment. For this tracheal type, and probably for acute laryngitis, some cases will have speedy relief after short-wave diathermy.—I am, etc.,

London, W.1, Nov. 3rd. J. H. DOUGLAS WEBSTER.

Bacteriological Examination of Milk

SIR,—The scheme of the Milk Marketing Board for the supply of milk to school children is now in operation. It has been decided that all milk supplied to schools under the jurisdiction of the London County Council shall be "pasteurized," and in accordance with the arrangements made between the medical officers of health of the metropolitan boroughs and the County Council, samples

are being taken for chemical analysis and bacteriological examination. It is suggested that the procedure to be adopted in the event of adverse reports being received upon these samples shall be to issue a warning in respect of a first unsatisfactory sample and to withdraw the approval of the source of supply should a second sample be reported not to conform to the prescribed standards.

The Milk (Special Designations) Order, 1923, lays down certain conditions under which graded milks may be sold, and these include a requirement that, on a sample being taken after pasteurization and before delivery to the consumer, the milk shall be found to contain not more than 100,000 bacteria per cubic centimetre. The Order provides, further, that a licensing authority, if it is satisfied that any of the conditions upon which a licence is granted are not being complied with, may suspend or revoke the licence.

It is my considered opinion that most of the reports now received with regard to the bacteriological examination of milk are unreliable, and I suggest that, should the above procedure be carried out, serious injustice may be done. The question of sampling and examination of graded milks is one to which I have given considerable attention in the past, and, in support of my view, I would draw your attention to the following facts:

Some time ago I became dissatisfied with the results of the examination of samples, which, at that time, were being submitted to one of the largest laboratories specializing in this work in the country. I therefore decided to send test samples to another laboratory.

Two churns of milk were selected upon delivery at each of two hospitals in Hammersmith, and duplicate samples taken from each. The same methods were adopted for each sample. Bottles, sterilized under exactly similar conditions in the laboratory, were used for each of the samples. They were immediately packed on ice, and four were submitted to the usual laboratory and four to another well-known institution. Sample "A" was reported by one laboratory to contain 39,850 bacteria per c.cm. (well within the prescribed limit), and by the other 144,000 per c.cm. (nearly 50 per cent. above the legal maximum). The other three reports all showed similar variation.

Recently I have had further tests made, with startling results. A quart bottle of pasteurized milk was taken and, after being thoroughly shaken, divided into six parts. Sterile bottles were used and every precaution taken during the division. Two of these bottles were submitted to each of three laboratories. The following table gives particulars of the reports received:

No. of Sample	Bacteriologist	Temperature on Arrival	No. of Bacteria per c.cm.	Presence of *B. coli* (48 hours)			
				1/10	1/100	1/1000	1/10000
1	No. 1 laboratory	13° C.	9,270	+	–	–	
2	No. 1 „	13° C.	14,300	+	–	–	
3	No. 2 „	11° C.	147,333		–	–	–
4	No. 2 „	11° C.	3,400,000		–	–	–
5	No. 3 „	14° C.	36,000	+	–	–	
6	No. 3 „	14° C.	47,000	+	+	–	

It will be seen that one report gives a bacterial count of 9,270 per c.cm., and another of 3,400,000 per c.cm. for the same milk, and that the results obtained by one laboratory vary from 147,000 to 3,400,000. Other tests have been made, and the above figures are typical of the results obtained.

In view of these facts I think it must be agreed that to withdraw a licence upon such unreliable data would be most unjust. In Memo. 39/Foods the Ministry of Health sets out a suggested technique for the bacteriological examination of graded milks. If this is properly carried out the results should be reasonably comparable. I can only assume that, in making their examinations, bacteriologists do not faithfully and carefully carry out the suggested procedure. Unless every stage, from the composition of media to uniform heating in the incubators, is standardized the results must vary.

There is one point in the Ministry's suggested technique to which I would draw attention. In paragraph 12 it is stated that the original sample and each dilution must be shaken twenty-five times, each shake being an up-and-down motion, with an excursion of about one foot. This shaking is, of course, to distribute the organisms in the sample evenly, and, secondly, to break up any bacterial aggregates which may have been formed. Most samples of graded milks are submitted to the bacteriologist in the bottle in which the milk is sold, and, as such bottles are usually entirely filled with milk, it is unlikely that any proper mixing is obtained by shaking, unless the milk is first transferred to a larger bottle. Again, the vigour with which the shaking is conducted may make an appreciable difference to the final count. I suggest that more uniform results would be obtained by the use of a mechanical shaker, working at a standard speed.

Reviewing the position as it now stands, I am of opinion that little value can be placed upon the reports received, and that, until a more standard practice is adopted by bacteriologists, both time and money are being wasted in submitting milk samples for examination.—I am, etc.,

J. B. Howell,
Medical Officer of Health.

Town Hall, Hammersmith, W.6, Nov. 1st.

Whither General Practice?

Sir,—From what I hear around me I conclude that there must be many medical practitioners who deeply resent the fact that they are not permitted to attend their patients who enter the smaller hospitals and nursing homes; and I am surprised to hear that my medical friends have little expectation that a grievance, which is often shared by their patients, will be removed. Yet in many cases their patients enter these institutions *solely* because of the better nursing arrangements and facilities therein provided. Why, in these cases, the family doctor should be debarred from continuing his services, if he pays his visits at specified hours, is incomprehensible to me.

Surely it must be in the interest of the whole profession that the family doctor—the "backbone of the medical profession"—should not lose prestige in the eyes of his patients; and it must be to their disadvantage to be transferred to other local practitioners who lack his special knowledge and experience of their previous illnesses. It is, moreover, a regrettable fact that such a transfer of medical services occasionally leads to the patient changing his doctor after his discharge. Although this may be attributable to the usual commendation of their medical chief by a devoted nursing staff, local medical harmony is seriously disturbed.

Therefore it is not surprising to learn that it is the policy of the British Medical Association that, where possible, the family doctor shall be permitted to continue to attend upon his patients. But if this is so, may we be told what the B.M.A. is doing in the matter?

The problem of remedy is not insoluble. The solution is at the hands of the small medical staff of such institutions; and with the good will and loyalty common among medical gentlemen it can be solved very shortly. So I am loath to believe that an appeal by the B.M.A. to this end would fall upon deaf ears. But if this should happen in some few instances the appropriate action suggests itself.—I am, etc.,

Henry R. Kenwood.

London, N.4, Nov. 4th.

Concurrent Varicella and Herpes

SIR,—I read the letter of Dr. Fishman describing his case of concurrent varicella and herpes zoster, in the *Journal* of November 3rd (p. 836), with interest, as a similar case of mine, in a man aged 74 years, was published by you, together with two illustrations showing the rashes, in your issue of July 22nd, 1933. Since then several other cases of this pathological partnership have been described in the literature. Post-pituitary extract intramuscularly, in doses of 3 to 10 units per diem, has recently been used by some in treating cases of herpes zoster, and I would like to know if anyone has tried this in cases of varicella, in view of the fact that there is more than probably a close relationship aetiologically between the two diseases.—I am, etc.,

Leicester, Nov. 4th. F. A. E. SILCOCK.

Thrombosis of Internal Saphenous Vein

SIR,—In the *Journal* of July 28th Dr. A. S. Parkinson advocates the proximal ligature of the saphenous vein if possible in cases of thrombosis. But what is wrong with excision of the thrombus? An ex-major came to us limping, and with a history of varicose veins in the left leg. He told us that during the war a surgeon had offered to excise his veins, but he could never spare the time to lie up in hospital. On inspection a large thrombus was found. As he was a house friend I kept him in bed in my house for a week, but then he became restless. Being an active man, he did not like wasting his time in bed. So I excised the whole thrombus under local anaesthesia, after ligaturing the saphenous vein with catgut. I made an elliptic incision, cutting into healthy skin, as the skin over the thrombus looked dark and thin. He made an uninterrupted recovery, and was at work in the garden after a fortnight. He was especially pleased about the relief of pain, and it seems to me that the period of forced rest is greatly shortened by removing the whole thrombus. As the skin is usually adherent to the inflamed thrombus, and is thin and unhealthy at that spot, it is advisable to excise a large piece of skin with it. I had to put a pressure pad on, as there was a hollow where the thrombus had been, but this was completely filled up in a few months' time.—I am, etc.,

Sterkstroom, Cape, Oct. 8th. S. J. D. ESSER.

Therapeutic Malaria and Haemoglobinuria

SIR,—Dr. C. B. Bamford, in his article (*Journal*, October 27th, p. 764) on haemoglobinuria seems to us to go rather too far in one or two points of his discussion of the matter.

From the details recorded we ourselves would have had, we think, a little doubt about this being a case of blackwater fever, in spite of "the appearance of most of the characteristic features of the disease in the usual sequence," and for the following reasons:

1. Investigation of more than a man's previous history is needed to exclude latent malignant tertian malaria.

2. Unless very severe, haemolysis occurring in *any* case of quinine-treated malaria—and particularly one in which subtertian infection was not proved—would, to our mind, first raise the question of toxic action of quinine rather than one of true blackwater.

3. This patient seems to have had a haemolysis of gradual development, without bilious vomiting or pain, and four days after the commencement of the haemolysis his blood haemoglobin content was hardly disturbed.

4. Although the man had had no previous haemoglobinuria it seems unfortunate that his serum was not tested, after chilling, against his own and other erythrocytes.

Incidentally, in spite of more modern opinion, Dr. Bamford will find in at least one textbook—the sixth edition of Sir Patrick Manson's *Tropical Diseases*—expressions of this kind:

"It is *usually* in those who have suffered from subtertian infection—more rarely from tertian or quartan, or from dysentery, or who are run down from any cause—that blackwater occurs." (Italics ours.)

—We are, etc., E. M. VOIGT.
C. VOIGT.

October 31st. From N. Rhodesian Clinical Laboratory, Broken Hill, N. Rhodesia.

Dilating the Cervix in Placenta Praevia

SIR,—Dr. A. J. Hawes, in his article on the death of Mauriceau's sister (*Journal*, October 27th, p. 783), expresses some apprehension as to the safety of "manually dilating a cervix with a placenta attached to it." Having had a considerable experience of cases of placenta praevia—over a score—without a maternal death, I can assure him that the careful obstetrician need have no fear of inflicting damage. If placenta is detached from uterine wall as far as the finger can reach, the cervix will dilate-up readily under gentle but firm stretching by the fingers without showing any tendency to laceration. The whole hand should then be passed into the uterus—it is presumed that the membranes have been ruptured early—the child turned and slowly delivered. It is true that very great prior loss of blood may entail more rapid delivery, but even then I have never known damage to occur.—I am, etc.,

Harston, Cambridge, Oct. 30th. W. J. YOUNG.

Differential Diagnosis of Chronic Rheumatic Disease

SIR,—It is often very difficult, yet a matter of great moment, to decide whether a case is one of muscular rheumatism, nodular rheumatism, neuritis, or incipient arthritis, nor can radiograms be relied on to exclude arthritis in the early stages. Sciatic pain may be referred from a spondylitis or from a fibrositis; chronic stiffness and pain in the neck may be muscular or due to a cervical arthritis; a swollen finger-joint, though technically an arthritis, may be an entirely transient lesion which clears up leaving no trace, or it may be the forerunner of a severe generalized infection leading to crippling osteoarthritis. Again, it is not always easy to decide between a true rheumatoid arthritis and a very active osteoarthritis.

A pathognomonic sign of an early or threatened osteoarthritis would be of great value. Such a one, I believe, is to be found in the knee-joint. When osteoarthritis is present anywhere in the body, or even only threatened, it seems to be an absolute rule that the cartilaginous surfaces of this joint show some erosion. By pushing the patella to and fro transversely over the condyles of the femur when the leg is straight and relaxed, we are rubbing two cartilaginous surfaces together. To the observer the sensation imparted in the normal knee-joint is one of velvety smoothness, whereas in cases of osteoarthritis this is replaced by a faintly gritty sensation, or a "knock," which is quite obvious to the practised hand. It does not follow that patients make any complaint of the joint. Frequently they are unaware of the abnormality, and the surfaces, though rough, are quite insensitive. Typical primary rheumatoid and non-articular arthritis are excluded by a positive, osteoarthritis by a negative, sign. This has now been recorded in many hundreds of cases at the Charterhouse Rheumatism Clinic and in private, and so far has never given a wrong indication. I therefore venture to bring it to the notice of members of the British Medical Association for their trial, and later, I hope, for their endorsement.—I am, etc.,

H. WARREN CROWE, D.M., B.CH.OXON.

London, W.1, Nov. 1st.

B.C.G. Vaccine

SIR,—I am grateful to Dr. G. Gregory Kayne for drawing my attention to the dilution of the parenteral B.C.G. (BCG-SC) issued by the Institut Pasteur, Paris (*British Medical Journal*, October 27th, p. 791). I was working in America with a strength of 0.1 mg. in 0.1 c.cm.; this is a convenient quantity for an intradermal injection, and can be quite accurately measured in a Mantoux syringe. I was under the impression when I wrote my book that this was the strength issued by the Institut Pasteur.

Since reading Dr. Kayne's letter I have written to Paris to see if such a strength could be specially made for intradermal use, or whence it could be obtained; I will inform him as soon as any arrangement has been reached.

Instructions that the vaccine should be used within ten days of its preparation are issued with each ampoule of B.C.G.—I am, etc.,

Henley-on-Thames, Nov. 3rd. K. NEVILLE IRVINE.

"The Angel of Death"

SIR,—When I read Mr. G. Gordon-Taylor's excellent address on "Bad Surgical Risks" in your issue of October 27th I realized that between us we had very completely destroyed the famous passage from the speech of John Bright on the Crimean War, which runs as follows: "The Angel of Death has been abroad throughout the land; you may almost hear the beating of his wings."

I quoted from memory at the Association of Surgeons meeting in Birmingham, and in doing so unconsciously paraphrased the quotation to make it applicable to my subject. The words I actually used were as follows: "The Angel of Death is hovering o'er them, so close that they can almost hear the fluttering of his wings." I think the paraphrasis was justified, though I admit that the use of the word "fluttering" instead of "beating" robs the passage of much of its power and beauty. For the final form as given by Mr. Gordon-Taylor I must disclaim all responsibility.—I am, etc.,

Manchester, Oct. 30th. GARNETT WRIGHT.

Universities and Colleges

UNIVERSITY OF OXFORD

Radcliffe Prize

The next award for the Radcliffe Prize will be made in 1935. The prize, which is of the value of £50, is awarded by the Master and Fellows of University College, Oxford, every second year for research in any branch of medical science, comprised under the following: human anatomy, physiology, pharmacology, pathology, medicine, surgery, obstetrics, gynaecology, forensic medicine, hygiene. The prize is open to all graduates of the University of Oxford who have proceeded, or are proceeding, to a medical degree in the University. Candidates must not have exceeded twelve years from the date of passing the last examination or the Degree of B.A., and must not, at the date of application, be Fellows on the foundation of Dr. John Radcliffe. Candidates must send in their memoirs to the Secretary of Faculties, at the University Registry, Oxford, on or before January 1st, 1935. The award will be made in March, 1935. No memoir for which any University prize has already been awarded is admitted to competition for the Radcliffe Prize; and the prize will not be awarded more than once to the same candidate.

Board of the Faculty of Medicine

The Board has co-opted Dr. E. W. Ainley Walker, Fellow of University College, and Dr. A. M. Cooke, Jesus College, for the statutory period of two years. The Board has appointed Dr. O. L. V. S. de Wesselow, Corpus Christi College, to be an Elector to the Professorship of Pharmacology, vice Sir Charles Sherrington, who retires under the age limit.

Professor of Pathology

The Electors to this Professorship propose shortly to proceed to an election of a Professor in the place of the late Professor Georges Dreyer. Candidates should send in their names, with eight copies of any statement, references, and testimonials that they may think it desirable to submit, so as to reach the Registrar not later than December 22nd. Candidates are requested to state the earliest date on which they could take up their duties. The choice of the Electors will not necessarily be limited to those who apply. The stipend of the Professorship is £1,200 a year, in addition to which there is a special allowance of £200 in respect of duties as Head of the Department. Subject to the provisions or Statt. Tit. IV, Sec. III, cls. 5 and 6 a non-stipendiary professorial Fellowship at Lincoln College is attached to the Professorship. In accordance with the provisions of the University superannuation scheme the Professor will be required to become a member of the Federated Superannuation System for Universities.

During the illness of the Regius Professor of Medicine official correspondence intended for Sir Farquhar Buzzard should be directed to Professor J. A. Gunn, Department of Pharmacology.

UNIVERSITY OF CAMBRIDGE

The Appointments Committee of the Faculty of Biology "B" gives notice that it will shortly proceed to appoint a university demonstrator in pathology. The appointment will be governed by the statutes of the University, and particulars as to stipend and duties may be obtained from Professor Dean, at the Department of Pathology (Tennis Court Road, Cambridge), to whom applications should be sent on or before December 1st.

At a congregation held on November 3rd the following medical degrees were conferred:

M.D.—A. Barnsley, A. Eckford, W. E. Chiesman.
M.B., B.CHIR.—E. V. Bevan, H. B. May, J. Metcalf, F. E. Pilkington, R. L. Benison.
M.B.—T. A. Ratcliffe.
B.CHIR.—J. H. Conyers.

The Molteno Institute

During the inquiry, as the result of which the General Board proposed regulations for the Molteno Institute of Parasitology, it formed the opinion, both on general grounds and on the particular ground of the temporary association of the Quick Professorship with the Directorship of the Institute, that it would be to the advantage, both of the University and of the Institute, if the scope of the latter was widened. Professor Nuttall has now consulted Mr. Molteno, who cordially approves the proposal to change the title of the Institute to the Molteno Institute of Biology and Parasitology. The Faculty Boards of Biology "A" and "B" have expressed their concurrence, and appropriate recommendations are published in the *University Reporter*.

UNIVERSITY OF LONDON

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Kenneth Mellanby, B.A., Ph.D., has been appointed to the Wandsworth Scholarship for Research in Tropical Medicine for a period of two years.

The following degrees were awarded by the Senate on October 24th:

PH.D. IN ANATOMY.—Ralph Brooke (Guy's Hospital).
PH.D. IN HELMINTHOLOGY.—Phyllis Annie Clapham (London School of Hygiene and Tropical Medicine).

NATIONAL UNIVERSITY OF IRELAND

A meeting of the Senate was held on October 25th, under the chairmanship of the Chancellor, Mr. Eamon de Valéra.

The reports of the examiners on the autumn examinations were considered, and passes, honours, etc., awarded in connexion therewith. The reports of the examiners in connexion with travelling studentships and other prize examinations were also considered, and the following among other awards were made: *Dr. Henry Hutchinson Stewart Medical Scholarships:* (in Anatomy) J. Burke, University College, Cork; (in Physiology) R. G. Barry, University College, Cork; P. F. Brennan, University College, Dublin; J. Burke, University College, Cork. *Dr. and Mrs. W. A. Browne Gold Medal:* Paula Mecklenburg, University College, Dublin.

The Senate decided that a special first University examination in Medicine should be held in March, 1935, for students who have completed the lectures therefor; that the Dr. Henry Hutchinson Stewart scholarships in arts, in medicine, and in mental and nervous diseases should be offered for competition in 1935; and that travelling studentships in chemistry and mathematical science should be offered for competition in 1935 as additional travelling studentships.

Obituary

DR. GEORGE ADKINS

With the death of Dr. George Adkins the West Country loses one of the best-known and most respected pioneers of the Public Health Service. Dr. Adkins was trained at the London Hospital, qualified in 1882, and took his D.P.H. at Cambridge University in 1888. He began his medical career in general practice with his father at Yealmpton, Devon, where he was also medical officer of health to Plympton rural district. Later he joined a practice in Paignton, but left there to serve in the South African War, where he contracted typhoid fever. After the war he practised in the Isle of Wight until 1908, when he returned to Devonshire as first county medical officer of health. In Devon he faced the initial difficulties with courage and energy, inspired, as always, by high professional ideals. Gradually a very competent staff to help with tuberculosis and the school medical service was got together, and when in 1929 Dr. Adkins finally laid aside his life's work he was held in universal affection and esteem by all those whose good fortune it was to be associated with him.

Dr. Adkins possessed deeply religious convictions, and was always ready to turn his energy and ability to the assistance of any good work, such as that connected with the Church and with the Boy Scout movement. He was a member of the British Medical Association from June, 1892, until January, 1929, when he resigned. Devon regards his loss as irreparable, but he has left behind him a magnificent example as an inspiration to those who follow.

Dr. Arthur Deaker Owen died on November 1st at St. Mary's Hospital, Hampton, at the age of 73, after three months' illness. He was the son of Dr. Edward Thomas Owen of Totnes and Plymouth. He was educated at King's School, Bruton, and the London Hospital. After qualifying M.R.C.S., L.R.C.P., and L.S.A. in 1884, and acting as house-surgeon to the Teignmouth Hospital and the Portsmouth Royal Hospital, he accepted an appointment in Government service in the Federated Malay States. Over forty years ago he returned to England and settled in practice at Hampton-on-Thames, only retiring at the beginning of his last illness three months ago. While in practice at Hampton, Dr. Owen held many public appointments. He was honorary surgeon to St. Mary's Hospital, Hampton, medical officer in charge of the Isolation Hospital, Hampton Hill, M.O.H. to the Hampton Urban District, police surgeon, and surgeon to the Metropolitan Water Board. He had been a member of the British Medical Association for forty years.

"S. C. S." writes: It was my very great privilege to be in partnership with Dr. Owen for more than ten years. I think he was the ideal family doctor. He was a sound clinician, and to an inborn skill was added the outcome of a lifetime's careful observation and study. He was kindly to all, always cheerful, and of an unruffled and unfailing courtesy. I do not believe that he ever attended a patient without making a friend. The words "beloved physician" have been spoken of many, but I know of none to whom they can apply more truthfully.

Dr. Norman Fox Edwards, who died on October 27th (his 64th birthday) in a nursing home at Wolverhampton, was the second son of a Manchester physician. He graduated M.B., Ch.B. from the Victoria University of Manchester in 1894, and after filling various resident appointments in provincial institutions entered upon general practice at Broseley in Shropshire. There he remained for over thirty years, becoming a member of the British Medical Association in 1912 and continually extending the area of his practice. His whole heart was in his work, and he was a man who thought things out and gave of his best ungrudgingly. He retired from active work in 1930, and went to live near Bridgnorth, close to his beloved Severn. The illness which ended his life was of only one week's duration. He was buried on October 30th in the romantic churchyard of Quatford, overlooking one of the loveliest reaches of the Severn. In 1909 Dr. Fox Edwards married Isabel, daughter of the late Joseph Hartley of Glazebury, who, with a son and two daughters, survives him. In his early manhood he was an athlete and long-distance swimmer, whilst for many years before his death he was an ardent fisherman, and had acquired a wide reputation for his knowledge of the art of fly-fishing. The large number of people who came to his funeral from the Broseley district, and from Bridgnorth, showed how greatly he had endeared himself to his patients, and how sincerely he will be mourned by all who knew him.

The Services

HONORARY SURGEON TO THE KING

Major-General Sir Frank P. Connor, D.S.O., F.R.C.S., I.M.S., Honorary Surgeon to the Viceroy, has been appointed Honorary Surgeon to the King, in succession to Brevet Colonel G. D. Franklin, C.I.E., O.B.E., I.M.S., who has retired.

Major William Leslie Bennett, R.A.M.C. (ret.), died at Swanage on September 8th, aged 57. He was born on August 23rd, 1877, and educated at Glasgow, where he graduated M.B. and Ch.B. in 1898. He also took the F.R.C.S.Ed. in 1906. Entering the R.A.M.C. as lieutenant on June 21st, 1900, he became major on March 21st, 1912, and retired on half pay on March 1st, 1917.

Medical Notes in Parliament

[From our Parliamentary Correspondent]

The House of Commons spent most of this week in committee on the Betting and Lotteries Bill. Discussion arose on a proposal to authorize the establishment of a State lottery. The proposal to prevent the remittance of money to foreign lotteries was discussed.

In the House of Lords the Incitement to Disaffection Bill was considered.

On October 31st Sir Hilton Young presented in the House of Commons a Poor Law Bill "to amend the enactments relating to the relief of the poor in England and Wales so as to secure uniformity throughout Great Britain in the provisions relating to the disregarding of sick pay, maternity benefit, and wounds or disability pensions." The Bill provides that "in granting outdoor relief to any person the council of a county or county borough shall not take into consideration any maternity benefit under the National Health Insurance Acts, 1924 to 1932, except any increase of such benefit by way of additional benefit and any second maternity benefit; any wounds or disability pension received by a person whose resources are taken into account in relieving him, except so far as it exceeds one pound a week, the expression 'wounds or disability pension' meaning any retired pay or pension to which Section 16 of the Finance Act, 1919, applies."

Distribution of Radium

Replying on November 6th to Sir A. Wilson, Sir Hilton Young said that his attention had been drawn to the adverse criticism, in the fifth annual report of the Radium Commission, on the state of affairs at the Bristol centre (University of Bristol and Bristol Royal Infirmary) and the Newcastle centre

(University of Durham and Newcastle Royal Victoria Infirmary). It was the duty of the Radium Commission to distribute the radium at their disposal to the best advantage, and it appeared, from the report of the Commission, that they had transferred some radium from certain centres where it was not being fully used to others. He had no power to instruct radium centres how they should make the best use of the radium supplied, but one of the conditions of the loan to a hospital was that the latter should accept and treat suitable and properly accredited patients from any source.

Road Accident Figures.—Mr. Hore-Belisha told Mr. Parkinson on October 31st that 5,243 persons were reported as having died as a result of road accidents during the first nine months of 1933. For the first nine months of 1934, as a whole, the number of fatal accidents appeared to have been approximately the same, but comparison for the last two months of the period showed an improvement. Statistics of persons injured in road accidents during 1933 were available only for the year as a whole, but it was estimated that during the first nine months of that year the number was approximately 164,100. For the corresponding period of 1934 the number was approximately 176,200. The rate of increase over last year had been falling steadily during the last two months.

Water Supplies: Present Position.—Answering Mr. D. Grenfell on November 1st Sir Hilton Young said the average rainfall for September was above the normal, but October had been dry, particularly in the Midlands and the South. Returns received from water undertakers showed that the position generally was better than in the summer, and that where shortage existed or was threatened, remedial measures had been taken by providing additional supplies, or by economies in consumption. Water undertakers generally had the situation in hand, provided that, where necessary, consumers continued to co-operate by economies in the use of water. In very few urban areas had there been serious curtailment of supplies. On the same day the Minister told Mr. Parkinson that applications for grants for rural water schemes had been received from 210 rural district councils, for 1,189 parishes, and from twelve urban district councils, for schemes estimated to cost £3,270,000. Grants had been provisionally allocated in respect of schemes for 712 parishes and those of 219 parishes were under consideration.

Sir Hilton Young stated on November 6th that measures were in train for a survey of water resources. He hoped shortly to announce them.

Atophan.—Sir John Gilmour told Captain Cunningham-Reid on November 1st that he was bringing the evidence of the professor of pharmacology at Birmingham University, and the remarks of the Birmingham coroner at a recent inquest on the effects of the drug atophan, to the notice of the Lord President of the Council and the council of the Pharmaceutical Society, the authorities responsible for additions to the Schedule of Poisons.

Milk During Pregnancy and Lactation.—Sir Hilton Young told Miss Rathbone on November 1st that there were 422 maternity and child welfare authorities in England and Wales. The great majority of them exercised their powers under the Maternity and Child Welfare Act, 1918, to provide milk and food for mothers during the last three months of pregnancy and during lactation, but the actual number was not available. In a circular addressed to local authorities on October 10th on the subject of maternal mortality, he had stressed the importance of using these powers in appropriate cases.

Local Authorities and Maternal Mortality.—In reply to Mr. Paling on November 1st Sir Hilton Young said he was aware that the annual report of the Chief Medical Officer of the Ministry of Health for 1933 showed that the councils of eight counties, seven county boroughs, and five metropolitan boroughs had sent no confidential reports on maternal deaths to his Department. He had no power to require submission of such reports, but every opportunity was taken of urging upon the local authorities the importance of co-operating in the desired inquiries. Even in cases where the reporting medical officer did not feel justified in furnishing any comments on, or interpretation of, the facts disclosed, the reports did not necessarily lack evidence of careful investigation. Medical officers of his Department who examined the reports had the advantage of the advice of two consultant obstetricians, whose services had been retained for the purpose.

Workmen's Compensation and Cardroom Workers.—Replying to Sir John Haslam on November 1st Sir John Gilmour said he had considered scheduling cardroom workers under the existing Workmen's Compensation Acts, but there would be great difficulties in meeting the position by adding to the schedule of industrial diseases under the Act, having regard to the absence of any special clinical features which would enable the lung condition of the workman to be diagnosed as due to dust. He had written to the Employers' Federation urging it to consider some special scheme, and suggesting that it should arrange for an early meeting of representatives of both sides to explore the problem.

Housing.—Sir Hilton Young told Mr. White on November 1st that he did not think provisions to enable local authorities to control ribbon development could conveniently be included in housing legislation. In reply to Captain Waterhouse, on the same day, the Minister said the policy of the Government was not to confirm any order by a local authority seeking to include in a clearance area, under the Housing Act, 1930, a building fit for habitation, merely by reason of its bad arrangement in relation to its neighbourhood or on account of the narrowness or bad arrangement of the streets.

Exhaust Fumes.—Mr. Hore-Belisha told Mr. Parkinson on November 1st that the report of a Home Office Departmental Committee, which considered the harmful effects of fumes from motor vehicles on the general health of the public, did not suggest that there was such evidence of injury as would justify legislative action.

Imported Milk.—Sir Hilton Young told Mr. Lambert on November 1st that he did not consider an investigation into the health of the animals producing the milk and into the cleanliness of the manufacture of the milk products imported from foreign countries was needed. Imported milk was subject to special bacteriological conditions which did not apply to home-produced milk, and all milk products to examination at the port of entry to ensure that they were fit for human consumption.

Control of Poisons in Agriculture.—Sir John Gilmour, on November 5th, told Sir John Wardlaw-Milne that the control to be extended to retail distribution of poisons used in agriculture and horticulture was among the matters under examination by the Poisons Board. The Board had invited the observations of associations of manufacturers, traders, and others upon a draft of the proposals to be later submitted, and he would consider their recommendations when all the observations had been received.

Outbreaks of Foot-and-mouth Disease.—Dr. Elliot, replying on November 5th to Mr. W. Nicholson, said that during the past three months seven outbreaks of foot-and-mouth disease had occurred which could not be attributed to previous cases in this country. In none of these outbreaks was the source of infection definitely established, and in no case was there reason to believe that animals imported into this country were the first to be affected.

London Refuse Disposal.—Mr. Shakespeare, on November 5th, informed Sir C. Rawson that the Minister of Health was aware of the interim report of the Cleansing Subcommittee of the Metropolitan Boroughs Standing Joint Committee on the Disposal of Refuse. The Minister was advised that where controlled tipping could be and was properly carried out it was a satisfactory method of disposal. The method is most advantageous, for any particular place must depend on local circumstances.

Maternal Mortality in Liverpool.—Sir Hilton Young, on November 6th, told Sir A. Wilson that there was no evidence from statistics that any increase in the maternal mortality rate in Liverpool was caused by malnutrition of mothers. The Liverpool rate was still well below that for the whole country.

Total Blindness from War Service.—On November 6th Major TRYON told Lieut.-Colonel Moore that during the last five years eighty-six cases had been admitted to pension in respect of eye disabilities resulting from war service. Of these, two were cases of total blindness.

The "Silent Zone" and Road Safety.—Mr. HORE-BELISHA informed Mr. Robinson that the institution of the "silent zone" had met with overwhelming approval. It was not primarily instituted to promote safety but to increase the opportunities for rest and recuperation of workers and the sick. This purpose had been achieved without any increase in the number of accidents being attributed to the new regulation. He was not at the moment prepared to make a general prohibition of the use of motor horns and other noisy indications of approach. Mr. Hore-Belisha informed Dr. Salter, on November 5th, that from July 9th, 1934, the date on which uncontrolled pedestrian crossing-places were first laid down in the metropolitan police district, to October 31st inclusive, four persons were killed and 194 injured on these uncontrolled crossings.

Notes in Brief

An explanatory circular to local authorities on the Shops Act, 1934, will shortly be issued.

Persons in receipt of poor relief in England and Wales—including dependants but excluding rate-aided patients in mental hospitals, persons in receipt of domiciliary medical relief only, and casuals—on October 13th, 1934, numbered 1,310,668. Of these, 134,854 were chargeable in Wales with Monmouth.

Medical News

The fifty-seventh anniversary dinner of the Cambridge Graduates' Club of St. Bartholomew's Hospital will take place on Wednesday, November 21st, at 7.30 p.m., at the May Fair Hotel, with Professor Francis R. Fraser in the chair. The honorary secretaries are Dr. H. N. Burroughes and Mr. Reginald Vick.

The annual dinner of the Prince of Wales's Hospital Club will be held at the Trocadero Restaurant on Thursday, November 22nd, at 8 p.m., when Dr. Lewis R. Yealland will occupy the chair. Price of dinner, exclusive of wine, 12s. 6d., to be paid in advance. Members are asked to notify Dr. Bertram H. Jones (honorary secretary), 47, Queen Anne Street, W.1, of intention to be present, stating number of guests. (Lady guests may be invited.)

A meeting of the Tuberculosis Association will be held at 26, Portland Place, W., on Friday, November 23rd, at 5.15 p.m., when Dr. L. S. T. Burrell will deliver his presidential address, on "Tuberculosis Reinfection in Adults." At 8.15 p.m. Dr. G. T. Hebert will read a paper on "The Termination of Artificial Pneumothorax Treatment."

The Royal Sanitary Institute will hold a joint meeting with the Yorkshire branch of the Society of Medical Officers of Health at Huddersfield Town Hall on Friday, November 16th, at 6 p.m., when there will be discussions on "The Huddersfield Scheme for Maternity and Child Welfare Work," to be opened by Dr. John M. Gibson, and on "Recent Housing Developments in Huddersfield," to be opened by Mr. G. Crossley.

A course of twelve illustrated lectures on the geology and scenery of the Hebrides will be given by R. M. Craig, D.Sc., in the lecture theatre of the Imperial College of Science, Exhibition Road, South Kensington, on Mondays, Wednesdays, and Fridays, at 5.30 p.m., from November 26th to December 21st, inclusive. Admission free.

The Central London Throat, Nose, and Ear Hospital (Gray's Inn Road, W.C.) has arranged a week-end course in laryngology, rhinology, and otology, specially suitable for general practitioners, on Saturday and Sunday, December 1st and 2nd, at 10.30 a.m. The fee for the course is £1 11s. 6d., and the names of those wishing to attend should be sent to the secretary-superintendent as soon as possible.

Dr. Leonhard Seif of Munich will give a course of three lectures on November 20th, 23rd, and 26th, at 8.30 p.m., on "The Principles and Practice of Individual Psychology." The course, which has been arranged by the Child Guidance Council for members of clinic staffs and others, will take place at the Institute of Medical Psychology, Malet Place, W.C. Admission free.

The Royal Photographic Society is holding an exhibition of cinematography at 35, Russell Square, W.C. It is designed to show recent advances with special reference to the progress achieved in design of apparatus and the extension of the sound film to substandard sizes—developments which bring "talkies" into the class room, the social centre, and the home, and open up a new field in educational, cultural, and entertainment possibilities. The exhibition will be open, free, to the public until November 30th, on Mondays, Wednesdays, and Thursdays from 10 a.m. to 9 p.m., and on Tuesdays, Fridays, and Saturdays from 10 a.m. to 6 p.m.

A general course of post-graduate instruction, arranged by the University of Durham College of Medicine, opened at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on October 11th, and will be continued on Thursdays at 1.30 p.m. to December 13th, with the exception of November 15th, which date has been left vacant so that members may attend the scientific demonstrations arranged by the North of England Branch of the British Medical Association. A special course in midwifery and gynaecology is being held on Wednesdays at 3 p.m. Classes for clinical instruction in medicine and surgery, or lecture-demonstrations, will be continued every Sunday at 10.30 a.m. to December 16th. All medical practitioners are invited to attend these classes, for which there is no fee, and particulars will be given week by week in the diary column of our *Supplement*.

The Fellowship of Medicine (1, Wimpole Street, W.1) announces that lecture-demonstrations will be given at 11, Chandos Street, W., on November 13th and 20th, at 2.30 p.m. At the same place Dr. Christie will lecture on diet of the obese and thin, on November 14th at 8.30 p.m. Forthcoming courses include gynaecology at the Samaritan Hospital, November 17th and 18th; proctology at St. Mark's Hospital, all day, November 19th to 24th; rheumatism at the British Red Cross Clinic, Peto Place, N.W., on Tuesdays and Thursdays at 8.30 p.m., November 20th to December 6th; infants' diseases at the Infants Hospital, every afternoon, November 26th to December 6th; dermatology at the Blackfriars Skin Hospital, every afternoon November 26th to December 6th. A special M.R.C.P. course in chest diseases will take place at the Brompton Hospital on Wednesdays and Fridays, for four weeks, from December 12th to January 11th (excluding the Christmas week). Courses of instruction are open only to members and associates of the Fellowship.

The ninth Pan-American Sanitary Congress will be held at Buenos Aires from November 12th to 22nd, when papers will be read on hospital organization, venereal disease, small-pox, malaria, undulant fever, leprosy, yellow fever, milk, infantile mortality, tuberculosis, school hygiene, narcotics and alcoholism.

The eleventh Voyage Médical International on the Riviera, organized by the Société Médicale du Littoral Méditerranéen, will take place from December 26th to January 3rd, under the presidency of the dean of the Faculty of Medicine of Paris. The principal places to be visited are Nice, Cannes, Menton, Monte Carlo, Beaulieu, Grasse, and Vence. Further information may be obtained from the Federation of the Health Resorts of France, Tavistock House (North), Tavistock Square, London, W.C.1.

The issue of *Paris Médical* for October 20th is devoted to diseases of the kidneys and urology.

Mrs. Stanley Baldwin opened the new private wards at the Hendon Cottage Hospital, N.W., on the afternoon of Wednesday, October 31st.

A short ceremony in connexion with the transfer of Heatherwood Hospital, Ascot, to the London County Council by the United Services Fund took place at the hospital on November 2nd, when the title-deeds of the hospital were formally handed over by Major-General Lord Lock (chairman of the council of management of the United Services Fund). Mr. Somerville Hastings, F.R.C.S. (chairman of the Hospitals and Medical Services Committee of the L.C.C.), accepted the gift on behalf of the Council.

Dame Edith Powell, widow of Sir Richard Douglas Powell, first baronet, left £48,562. Her bequests included £1,000 to the Royal College of Physicians of London as a memorial of her husband, who was President from 1905 to 1910.

The King has granted permission to Dr. C. E. G. Beveridge to wear the insignia of the fourth class of the Order of the Nile, conferred upon him by the King of Egypt in recognition of valuable services rendered.

The chairs of medical pathology, medico-chirurgical anatomy, and operative medicine, and nine assistant professorships in the Paris Faculty of Medicine have recently been abolished. On the other hand, chairs for medical anatomy, dietetics and physiotherapy, hydrology and climatology, have recently been founded at Geneva University.

The American Congress of Physiotherapy has awarded its highest distinction, the Gold Cross, to Dr. Henri Bordier, professor of medicine at Lyons, for his studies in the physiology of high-frequency currents, to Dr. Oscar Bernard of Saint-Moritz, and to Dr. Franz Nagelschmidt of Berlin.

Dr. Gudmundur Hannesson, professor of anatomy and hygiene at Reykjavik, has been awarded the gold medal of honour by the University of Hamburg, and Dr. T. von Györy, professor of the history of medicine at Budapest, the Karl Sudhoff medal.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

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QUERIES AND ANSWERS

Treatment of Chronic Nasal Discharge

Dr. P. LIONEL GOITEIN (London, W.1) writes: In searching for a "hopeful" formula for this distressing symptom, is it within the bounds of possibility that your correspondent "M. S." (October 27th, p. 796) has been working too exclusively from the physical angle, and has overlooked what has proved (at least in my hands) a very helpful approach—namely, the psychological? "M. S." does not state whether the sinus and antra operations were necessitated by, or resulted in, this symptom. If non-purulent, I should like to emphasize from experience that psychotherapy can be trusted to dispel the symptom in question often quite dramatically. The nose is frequently utilized as a safety-valve for solving emotional conflicts, and other tensions, with copious rhinorrhoea. Hence, vicarious menstruation and the like anomalies. Certain hysterics and obsessionals are only too happy to side-track the issues in physical treatment. I recently had a patient with diuresis and enuresis, complicated by the nasal symptom referred to, who had run the gamut of sensitization, cauterization, catheterization, etc., to both organs, and who was relieved of bed-wetting in the early weeks of treatment. Similarly, one usually finds the adenoidal (and sinusoidal) conditions clear up—as they did in this case—soon after, and this without recourse to aught but modern psychological technique. While this is not vaunted as the treatment *par excellence* of all the mucorrhoeas, its use (in the absence of gross traumata or infective agents) is undoubtedly well justified.

Treatment of Trichophyton Infection

"AGRESTIS" (East Lothian) writes: There have been lately in your columns many communications on the treatment of this troublesome condition, but it has struck me that none of the writers has stated that his own particular method has cured himself. If the criterion of treatment is cure, I may feel some slight justification for writing now. I have for many years suffered intermittently from the condition, and after trying a variety of applications which produced not the slightest benefit, I fell back upon a simple, and what appeared to me to be a logical, form of treatment. Moisture is necessary for the growth of all moulds, and if a part is kept dry the soil is rendered less suitable, or at any rate conditions for growth become less favourable. Relative dryness can be ensured by the insertion of small strips of boric lint in the interdigital spaces. The strips should be in size about one inch by one-half inch, and they should be pressed well into the affected spaces. In my own case a fairly extensive and long-standing infection was comparatively quickly healed by this simple method, and recurrences in the favourite site of the fourth interdigital space are very quickly "scotched" by it. I can certainly recommend its trial, in association with the implied methods of cleanliness. The strips should be renewed night and morning.

Treatment of Ménière's Disease

Dr. R. H. BOTHAM (Manchester) writes: In answer to "Inquirer" (*Journal*, November 3rd, p. 843), I can recommend him to try the method of treatment of Ménière's disease set forth by Dr. W. S. Thacker Neville in an address to the Darlington Division of the B.M.A. in March, 1931. The address was published subsequently in the *Journal* of July 11th, 1931 (p. 54). The method is simple, and consists in the elimination of all salt from the diet, and the reduction of the fluid intake to the lowest endurable point. The object aimed at is the reduction of fluid pressure in the vestibule and semicircular canals. In my own case the attacks ceased at once after beginning treatment.

Income Tax

Interest on Borrowed Capital

"R. S." pays £300 a year interest, and last year deducted £75 therefrom, being income tax at 5s. in the £. What is the position if the tax payable in respect of his profits—and any other income he may have, for example from owning his own premises—comes to less than £75?

⁂ His minimum liability for the year is £75; when he has paid that and no more he has merely handed over the tax which he deducted—collected so to speak—on behalf of the Revenue, and has ultimately borne no tax himself.

Debts Outstanding on Retirement

"R. F." has retired, and the inspector of taxes wants him to pay tax on debts owing to him.

⁂ The inspector is probably right, in the circumstances, to insist on the last year's account being made up on a basis that shall adjust the cash receipts to an "earnings basis." Consequently any increase during that year, of the value of the debts on the books, can be brought into the calculation. But this does not mean that the amount (or value) of the debts at the end of the period can be brought in as receipts without deducting the corresponding total at

the commencement, and "R. F.'s" letter suggests that this is what the inspector is seeking to do. The inspector is correct in saying that unless the gross amounts of the debts are brought in they must be separately valued. An estimated percentage is not sufficient compliance with the statute.

General Practice and Appointment

"D. C." has an appointment which he regards as an essential part of his practice. The inspector refuses to include the emoluments in the general Schedule D assessment, claiming to assess it separately under Schedule E.

*** It is beyond doubt that the emoluments of a specific employment are assessable under Schedule E, but there is a general and officially approved practice of pooling such receipts in the Schedule D assessment. We are not informed of any special circumstances in this case. It might be advisable to ask the inspector for the reason why he is not following the general practice, and we shall be pleased to advise further if necessary.

LETTERS, NOTES, ETC.

Treatment of Ozaena

Dr. Elizabeth C. Mudie writes: I venture to give details of the treatment advocated by me for the distressing condition known as ozaena. Locally the patient applies a small pledget of cotton-wool to each nostril. This is soaked first in a strong solution of lactose at blood temperature. In addition, the nose and pharynx should be thoroughly douched, at first every two or three hours, afterwards thrice daily, in the solution, two drachms of lactose to four ounces of water being sufficiently strong. The rationale of this treatment is obvious. Saprophytes which are responsible for the condition split the lactose and release lactic acid, nature's premier disinfectant. The treatment is equally good for all cases of nose and throat catarrh. Constitutional treatment lies in a thorough revision of diet, with moderation of meat intake. Cheese, eggs, milk, wholewheat bread, rye bread, and coarse oatmeal cakes, vegetables of all kinds, conservatively cooked, green salads in abundance, tomatoes, raw fruit, and plenty of tap-water will do more to alleviate and cure such a condition than any other measures. Sugar, cakes, pastries, and sweets must be absolutely cut out of the diet, and tea sparingly taken—never with food. Buttermilk may be drunk with advantage at meals, but nothing but water between meals. Aim at two or three quarts daily. Artificial or real sunlight on the naked body will hasten the cure, and abundance of fresh air must be available during sleep. One of the finest intestinal cleansers I know is garlic. There is a popular prejudice against this pungent vegetable, but I am ready to believe that those who live with a victim of ozaena would rather endure the smell of garlic as the lesser of two evils. One clove or division of garlic thrice daily for a week or ten days will work wonders.

Motoring and the Expectant Mother

Dr. P. Labignette, writing in the *Rev. Med. Latino-Americana* for June, 1934, discusses the risks undergone by the indiscriminate use of the motor car during pregnancy, and believes that it has not yet attained to such a degree of mechanical perfection as to exempt its employment from interference with that condition, even in normal cases. During all abnormal pregnancies, early or advanced, or when past history gives indication of a tendency to abortion, all motor journeys should be forbidden. The car should always be well sprung. It is, states this author, the doctor's duty to inquire into the condition of springs, tyres, seats, and shock absorbers, and if in any doubt he should make a trial trip himself. The patient should not drive; and during the first twelve weeks and the final, or even the penultimate, month, she should be doubly cautious, especially if a primipara. Long journeys, especially if extending over several consecutive days, cannot be advised: if they are imperative, a gentle opiate douche or suppository is a valuable precautionary measure. To minimize pelvic congestion the expectant mother should leave the car and walk a short distance every two hours. The smoothest routes should be chosen, and the driver should not travel at a rate of more than about thirty miles an hour, and should avoid all bumping and jolting. In conclusion, Labignette states that when consulted as to the proposed journey the obstetrician must be cautious. If he forbids it and his advice is ignored he will be laughed at should no harm ensue. If he assents, should the patient abort, his reputation will suffer.

The Herbalist at Home

The *British Medical Journal* of May 27th, 1911, was devoted to quackery in all its aspects, and it contained a section on Herbalists and Medical Practice which began thus: "While it is no doubt well known to most of our readers that among the many varieties of unqualified persons who profess to treat disease there are some who call themselves herbalists, medical botanists, or by some similar name, it is perhaps less generally known that these herbalists have a definite organization and a monthly organ, and that they aspire to the possession of a right to practise equal to that of the qualified and registered medical practitioner." Some particulars in regard to this matter culled from the publications of herbalists were therefore included, and curious reading they make. We do not know if the *Herb Doctor* survives to-day as a periodical, but herbalists still ply their trade in "simple vegetable remedies, free from all injurious chemicals." Dr. H. R. Frederick sends us from Glamorgan a choice specimen of the kind of printed circular that still finds its way through letter-boxes in South Wales and other parts of our credulous island. "This struck me," Dr. Frederick writes, "as a masterpiece, reminding me much of the old quacks' circulars of the sixteenth and later centuries." A reproduction of the ingenuous leaflet is printed herewith, but we have omitted the self-styled expert's name.

To the Country at large!

TAKE NOTICE!

There is a

HERBALIST SHOP

now opened at

MANSEL ST., PORT TALBOT.

PLEASE READ CAREFULLY.

Ladies and Gentlemen,

After a period of 30 years (thirty years) of hard study and wide experience, a Port Talbot expert claims to cure most diseases that forms on human beings. Don't take to be persuaded by anyone, but come and see for yourself. We do not pretend to make miracles but out to assist nature, and the first complaint now to mention, and a very drastic one, is——

CANCER

It can be cured in 5 weeks (five weeks), also **Tumours** in less time. **Consumption** will absorb more time than above complaints, but from three to five months, without fail, this also can be cured of the worst stage, that is if you follow our instructions.

Rheumatism, Appendicitis, in four hours, or Inflammation in any part of the body.

Fits, Gall-stones, Dropsy and **Asthma** attacks can be released in ten minutes, and prevention can be had when you ask for it.

Expert: Mansel St., PORT TALBOT

The Grenfell Calendar

Among the first of the 1935 calendars to arrive is the Grenfell Calendar, which is again being sold in aid of the work of Sir Wilfred Grenfell in Newfoundland. In size and design it is exactly similar to last year's—namely, a page for each seven days with space for noting morning, afternoon, and evening engagements; there is also a further selection of photographs of Labrador and Northern Newfoundland. Its attractive design and reasonable price (3s. 6d.) make this calendar a suitable gift for this season of the year. It may be obtained from the Grenfell Association, 66, Victoria Street, S.W.1.

Correction

In the leader on "La Granulie Froide" (*Journal*, November 3rd, p. 815) the second reference should be to the *Bull. et Mém. Soc. Méd. des Hôp. de Paris* of June 25th, 1934, p. 886, and not to *Bull. et Mém. Soc. de Méd. de Paris* of June 15th.

The Marmite Food Extract Company Limited (Walsingham House, Seething Lane, E.C.3) has published a new booklet, based on many references to the therapeutic value of marmite which have appeared recently in medical literature.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 45, 46, 47, 48, 49, 52, and 53 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 248.